

*Journal of the Minnesota State Medical Association*

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# MINNESOTA MEDICINE

*Journal of the Minnesota State Medical Association*

VOL. IV

FEBRUARY, 1921

No. 2

## ORIGINAL ARTICLES

### COMPULSORY HEALTH INSURANCE AND THE MEDICAL PROFESSION.\*

By FREDERICK L. HOFFMAN, M. D.  
*Third Vice President and Statistician, The  
Prudential Insurance Company.*

Mr. Chairman, Ladies and Gentlemen:

It is a great pleasure to have an opportunity of addressing you on this important subject, more so after the eloquent remarks of the President of the Association, in which he touched upon certain phases of a question to which I have given extended consideration.

The propaganda for health insurance is in my judgment the most insidious as it is the most unnecessary effort to disturb the public mind on problems the solution of which lies in totally different directions. The propaganda has been forced upon the American public by an association professionally engaged in disturbing the public mind. It has reached a momentum which can no longer be ignored, particularly on the part of the medical profession, directly concerned. Apathy is as dangerous as indifference is inexcusable. The British Medical profession in 1910 missed its opportunity through the want of preparedness. Fortunately in this country, particularly in California and New York, the medical profession was aroused in time and made its opposition felt. No health insurance act can possibly be worked without the hearty cooperation of the medical men appointed to administer medical benefits; but no hearty cooperation is possible under any conditions which impose a state of bondage upon men heretofore free in the pursuit of a calling than which none is entitled to more respectful consideration.

In Great Britain 14,000 to 15,000 doctors are

hopelessly in bondage to the Government under an agreement which practically precludes the possibility of effective and far-reaching reforms. The medical profession was not consulted in the framing of the Act, nor was it ever—nor is it over here—fully in the confidence of the Government. The negotiations have therefore been mostly one-sided and in practically all essentials the British Medical Association has been compelled to accept the policy of the Government. This is particularly true of the terms of remuneration, of the income limitation, of the limitation of panels, of the restrictions on panel transfers at death, and last, not least, of the right of appeal to the Courts in cases of controversy or dispute. In all these important essentials the doctors have virtually been compelled to accept the policy of the Government dictated primarily by lay minds and for political objectives.

National health insurance affects every phase of social and economic life. It concerns not only the medical profession, but the pharmacist or druggist; the care of the poor; the proper methods of insurance; the freedom of labor and the cost of production, in national and international competition. It may safely be asserted that no sound social or economic principle underlies national health insurance, but that the measure throughout is primarily one of political expediency, intended to serve the purpose of relief as an offset to industrial unrest and discontent, regardless of plausible assurances of prevention and remedial benefits.

In Great Britain national health insurance is administered with an unusual degree of administrative efficiency. It would be utterly impossible under our form of government to reproduce the ability and public service capacity of the average British civil servant. It goes without saying that politics, in the sinister sense of the term, would play a much more important part in the administration of health insurance

\*Address given before the Minnesota State Medical Association, St. Paul, Minn., October, 1920.

in this country than abroad. All the glittering assurances of success rest upon guesswork and audacious assumptions. Those who are making propaganda for health insurance are not concerned with the patient, the doctor or the pharmacist, but their sole interest lies in the enormous administrative machinery which would come into existence to administer the act.

The British administration is of colossal proportions. The rules and regulations defy the human understanding and the man does not live who masters more than a fraction of the whole. The new medical benefit regulations cover 70 specific rules in closely printed type of 50 pages. These rules are subject to frequent changes and amendments and hardly has one set of regulations become well-understood when a new set is inaugurated in place thereof.

The British Act provides, in brief, that any person insured under the system is entitled to free medical care, or such as an ordinary practitioner would be expected to be able to render. Aside from medical benefit, the insured person receives a weekly cash benefit for 26 weeks of sickness duration, after the third day of illness, amounting to 15s. a week in the case of men and 12s. a week in the case of women. When the sickness extends over 26 weeks a disability benefit is paid, which amounts to 10s., for the remainder of the illness, irrespective of its duration. Furthermore, the Act provides for a maternity benefit of 40s. in the event of a confinement of an insured wage-working woman or of the wife of an insured wage-earner, or both.

Under the original Act a sanatorium benefit was provided for the tuberculous, but in practice the phraseology was so modified as to grant virtually unlimited powers to the Insurance Committees unable to square with the public expectations of first-class institutional treatment in the event of tuberculosis requiring sanatorium care. So-called domiciliary or home treatment therefore became the rule rather than the exception, with results far from satisfactory. In consequence the Government recently has enacted that the sanatorium benefit is, after January, 1921 to be provided for by the public authorities under the direction of the Ministry of Health.

I have restated these fundamental principles of the Act since they are frequently obscured

or overlooked. It must be clear to anyone who gives extended time and thought to the question that the relief portion of the Act is uppermost in the public mind. And it is in this particular matter that the political aspects of the Act are most disturbing, since the demand is continually for more and more, the aim being to bring about practically an equalization of wages not earned during sickness equivalent to the wages earned while at work. If the question had been faced squarely as an economic problem conditioned by the aim of maintaining the wage-earners' standard of life, the entire matter would have offered a much more simple solution, in the manner of conceiving unemployment for any cause as a fundamental basis of assistance in whatever form or however provided, including medical attendance, maternity assistance and a long line of supplementary benefits suggested at one time or another by those best familiar with the needs of wage-earners and their dependents. By making incapacity for work the basis of a claim for sickness benefit it is clearly recognized that it is the unemployment of the person that constitutes the claim for free medical attendance, etc., as the case may be. Under the new unemployment insurance law practically the same wage-earners will be insured under another system with a vast bureaucratic force employed in its administration and countless rules and regulations governing the most minute details of governmental or organization activities. It must be clear that a colossal blunder was made in not conceiving the proposed measures of relief rightly as an economic rather than as an insurance function, for as a matter of fact the term insurance as used in the present sense is a complete misnomer. The contributions are totally insufficient to meet the demand upon the funds, and vast Parliamentary grants are required to meet the deficiencies that would otherwise arise. As best illustrated in the present case of sanatorium benefit, the insured person receives precisely the same treatment as an uninsured person entitled to sanatorium care under the Poor Law, or of a person paying privately for the accommodation as an ordinary patient.

The subject is one of such vast extent and so complicated by special considerations, customs and usages as to preclude adequate presentation on an occasion like the present one where

brevity is necessarily of the first importance. I was about three months in England last year for the purpose of a personal investigation incidental to other duties connected with an investigation into the effects of the war on insurance, and I brought together what is probably the largest amount of evidence extant on the subject in this country. I had the most hearty cooperation of government officials and of private persons in high position and many others representative of every grade of society more or less directly affected by the operation of the Act. The results of this investigation are in course of being brought together in a series of special papers which will be available to those who may care to examine further into matters of detail. In brief, my conclusions are decidedly adverse to national health insurance as a measure promoting the pauperization of the people, leading to further stratification of industrial society and to unworthy class distinctions fostering social discontent while encouraging socialism, communism and every type of socialization opposed to the existing order.

There has been no improvement as the result of national health insurance in the health of the people, strictly conceived, nor in the public health activities of the nation, regardless of the expectations of the measure when enacted in 1911. The so-called medical benefit has degenerated into offhand medical advice, superficial consultations amplified by a bottle of medicine, concerned chiefly with trivial complaints, while major or serious complaints are as ill-cared for as ever. On an average, and I speak from personal observation, in a number of panel doctors' offices, the amount of time devoted to a consultation is about five minutes. The general impression in large panel offices in congested industrial districts is that the services obtained conform to the traditional methods of Poor Law medical relief. There is neither the time nor the inclination for thoroughness in treatment, nor an inducement for the panel doctor to rise in professional efficiency above a mediocre average.

Since drugs are provided free, there has unquestionably been an increase in the demand for "a bottle of medicine," frequently as harmless as useless. Drug prescribing is subject to stringent rules and regulations, since economy is of the first importance. All prescriptions are

priced by so-called Drug Pricing Bureaus, averaged at the end of the month, and the doctor whose average quota of prescriptions or average drug expense exceeds a certain standard, is required to appear before the Panel Committee and offer an explanation, which if unsatisfactory results in a fine which may assume serious proportions.

It is my deliberate conclusion that the social and economic status of the lower class of physicians has been appreciatively raised, but that at the same time the standard of the higher class has unquestionably been lowered. There is no longer the clear sense of active competition, but entirely too much time and thought is wasted on deliberations which concern questions of remuneration and conditions of medical practice. The panel doctors' offices which I have visited have left the distinct impression of a routine practice more concerned with medical amelioration than with effective methods of cure. It is appalling to see so large a number of persons treated in a superficial manner, largely because it is a natural assumption that in the majority of cases the ailment is either trivial or imaginary. In the smaller provincial towns conditions of panel practice are much better. I have been at some where they were certainly as good as the better class of private practice. This would suggest the advisability of drastic panel limitations, but the outlook in this respect is impaired by the raising of the income limit, as the result of which opportunities for private practice have been curtailed. A physician with a good sized panel and a fairly large private practice can not possibly do justice to both. Yet it is difficult to make a living from a small panel practice, of which a large number exist throughout the country. For, if there are 14,000,000 people insured, and 14,000 panel doctors, the average panel is only about 1,000 names to a doctor. A thousand names means a gross income from panel sources of 11,000 shillings, or £550, of which the present equivalent in American currency would be about \$1,900. In Manchester the remuneration is on the basis of attendance. In the aggregate, however, the compensation is the same, for there is just so much money in the pool for distribution, and the result is that doctors generally receive possibly eighty per cent of what they expect. The bills rendered are on the assumption of a fee of

about two shillings (or about 50 cents) per attendance. The average experience in England shows, however, that less, and some times considerably less, than this is received. In other words, there is a large amount of work for relatively small pay. The aggregate results are to the economic advantage of the doctor, contrasting his present secure position with an insecure practice among poor people in the past.

The possibilities of dissatisfaction are enormous. While prosecutions are relatively few, this is largely because of the amount of bureaucratic energy involved in disputes and prosecutions. Doctors are heavily fined or surcharged on all sorts of charges. Their right of appeal has been abridged and there is no appeal beyond the decision of the Ministry of Health, which is final. There has therefore developed a new movement, which is rapidly gaining force, for a change in the status of the British Medical Association from a professional society to that of a trades union. The threat of a strike does not so much involve the patients as it concerns the Government; for a strike under national health insurance would simply be equivalent to a collective refusal to serve the Government on the terms offered, and there would be a reversion to the earlier condition of unrestricted private practice. The St. Paul papers of to-day are announcing a strike of some 4,000 doctors in Vienna. Such strikes, under sickness insurance, are by no means uncommon.

In brief, the situation is one of chaos, with no possibility of a material improvement. The Ministry of Health, which has charge of the supervision of medical practice under health insurance, has developed into an immense bureaucratic machine. Every day additional duties and functions are assumed by the Ministry aside from totally alien activities not concerned directly with public health administration, such as old-age pensions, the poor-law, and housing reform. Yet what ever one may say or think about the British system, it certainly has come to stay. In 1601 Great Britain adopted a poor-law, which, regardless of every effort at fundamental change or modification, remains to the present day unchanged in its sinister influence upon the social life of the people. In much the same manner efforts to improve panel practice have failed. Unquestionably the medical pro-

fession is more satisfied to-day under the new terms of remuneration than eight years ago, but as emphasized by a letter from the secretary of the Medico-Political Union, which I hold in my hand, the changes which the new regulations were thought to bring about have fallen far short of expectations.

Of the many evidences of the curtailed rights and privileges proposed, the most important is the abridgement of the right to transfer panels by sale at death as invested interests. Anyone reading *The Lancet*, or the *British Medical Journal*, is familiar with the columns of advertisements of medical practices for sale, including a panel frequently of considerable size. Regardless of the strenuous opposition on the part of the British Medical Association, the regulation was adopted that in the future the redistribution of the panel at death must be made with the sanction of the Ministry of Health. All this is but evidence of the growing power and control on the part of the Government over the medical profession. The old freedom of private practice has hopelessly gone. To the young doctor entering the profession there is to-day practically no alternative but to seek a panel wherever he can find it, or however he can secure it. There is a curious dearth of definite information on the subject as to how conditions are expected to develop in the future. With diminished opportunities for private practice and a definite limit to the number of names which a panel doctor can call his own, the outlook is not encouraging.

It is not going too far, therefore, to maintain that the present method is practically the equivalent of a quasi system of state medicine. The trend is obviously in the direction of a public medical service. It is a foregone conclusion that the Ministry will not be satisfied with a condition of uncertainty requiring the reopening of negotiations every year or two under the threat of a strike. The panel doctors now are virtually state employees. A panel doctor can not take a vacation, or change his office hours, or his office location, etc., without permission from the Ministry of Health. The time is bound to come when the state will insist upon whole-time doctors, exclusively devoted to panel practice. State medicine today is a different conception from prevailing ideas a generation ago. Public health

discussions are no longer limited to the medical profession but are practically common to all people. The doctors are playing directly into the hands of lay reformers who make far reaching promises impossible of fulfillment. This is largely because of the false and vicious conception that the doctor is primarily concerned with the prevention of disease. The practice of medicine as a healing art concerns totally different matters than the administration of public health, including public and private, or personal hygiene. The prevention of death from disease is a very different matter from the prevention of disease occurrence. No more is the physician a health officer than that there is imperative need that a health officer should be a physician. The public to-day is led to expect from the medical profession that for which it is neither trained nor qualified. Group medicine, of which we hear much, is but a step in this direction, but group medicine concerns the diagnosis of existing disease and not the prevention of the onset of disease. In so far as consulting clinics aid in the earliest possible diagnosis they certainly perform a most useful, if not indispensable, health function. In many large corporations this fact is clearly realized and much good work is being done. Those who wish to grasp the new viewpoint should read a recently issued book on "The Future of Medicine," by Sir James Mackenzie, which is an epoch-making treatise opening new vistas of medical possibilities.

Many years ago, at the Maryland Tuberculosis Congress, the late Sir William Osler, in a seathing address, accused the people of Baltimore in the matter of disease prevention, of apathy, apathy, apathy! The same charge can be brought to-day against the medical profession's indifference to the dangers that menace its future. Apathy in the matter of health insurance propaganda is a betrayal of a precious professional interest. Those who are making propaganda for health insurance are neither of the medical profession nor connected with public health administration; they are almost entirely laymen interested in creating new offices and new opportunities for lay people to control the practice of medicine as a healing art. They are without experience and without the required knowledge of what is taking place in Great Britain and on the continent of Europe. There has been no

thorough investigation of the whole question, and the work of the committee on social insurance of the American Medical Association may be referred to as a grotesque perversion of a duty of profound importance not only to physicians but to the public at large. The people have a right to know the truth and nothing but the truth. If health insurance is for the advantage of the people it should be adopted; if, to the contrary, it is opposed to public interest, the agitating propaganda should be brought to an end by a full exposure of what I believe to be its unworthy and selfish motives. Doctors are very busy men, engaged in the most important of all functions—the treatment and cure of disease. It is of the essence of cruelty to impose upon them the additional duty to thoroughly consider a mass of information largely irrelevant, relating to so-called health insurance, yet that duty can not be shifted. It is a question of preserving an ancient art and craft against the designing assaults of a small group of professional propagandists chiefly under the guidance of the so-called American Association for Labor Legislation. That organization has no standing with organized labor and is serving neither a necessary nor a useful purpose. In so far as health reforms are urgently called for, they are matters of public health administration much more than of medicine as a healing art. Reforms in public health administration—federal, state and municipal—are needed but such reforms should be the result of deliberate consideration of the experience that has been had at home and abroad, pointing the way towards better results. There is enough ability in this country to formulate a plan acceptable to all concerned; but no one familiar with our far-reaching progress during the last thirty years can in justice ignore the extraordinary efforts that have been made in practically every state and community to raise the level of health and social well being of every element of the American population. We to-day have the lowest death rate, as we have the lowest sickness rate, of any people on earth. Our experience during the war has shown that our men represent the finest fighting stock extant. Our medical war record is one of which we have every reason to feel proud. Our future progress lies in the direction in which our past progress has

been achieved, modified, of course, in the light of the new knowledge and the new discoveries in the realm of disease prevention and control. We have very little to learn from any system of health insurance abroad otherwise than the one fundamental lesson that it will be best for us to leave this fatuous experiment in applied socialism severely alone.

### ACUTE GONORRHEAL URETHRITIS\*

By LEWIS WINE BREMERMAN, A. M., F. A. C. S.,  
M. D. and MALCOLM MCKELLAR, M. D.

Members American Urological Association, Chicago

So soon as the medical profession considers gonorrhea, its complications and sequelae, in the important light which it deserves, only then will scientific thought be given to the treatment of this widespread and devastating infection.

The genito-urinary surgeon and the gynecologist recognize the fact that gonorrhea plays a paramount role and its results are such that its effect upon mankind in general is so stupendous that it is unbelievable.

Some general practitioners have already begun to realize what gonorrheal infections mean, and frequently they arrive at an opinion that the disease is incurable on account of the difficulties which they have encountered eliminating the infection.

Gonorrhea has been known for many years, but it was only recognized scientifically in 1879 by the discovery of the cause by Neisser. He discovered an intracellular, biscuit-shaped diplococcus which was always found in the discharge in these cases, which had peculiar straining properties and would grow upon special culture media. This bacterium has been termed the gonococcus.

To gain the best results in the treatment of gonorrhea, the diagnosis is all important. All discharges from the urethra must not be considered gonorrhea by any means. Here is where the physicians make their first mistake. The diagnosis can be made accurately only with the microscope and culture-tube.

The diagnosis is not always so simple as it may seem. The fact that an individual has been exposed and has a discharge from the

urethra is no indication that he has gonorrhea. He may have a simple infection due to other bacteria than the gonococcus which resembles gonorrhea so closely that from signs alone it would be impossible to differentiate. The common bacteria found in non-specific infection are: *staphylococcus*, *B. coli*, *streptococcus*, *monococcus catarrhalis*. These, with the exception of the latter, are easily told by the microscope. The *monococcus catarrhalis* is more frequently mistaken for the gonococcus. It groups itself similarly, has the same staining qualities, and is Gram-negative. An experienced laboratory worker can frequently differentiate between the two by microscopic examination. The onset of the disease differs in the two infections. Gonorrheal infection has a longer period of incubation than the infection produced by the *monococcus*, but this is difficult to ascertain, for some patients may have two or three different exposures in the course of a week, the symptoms making themselves manifest a few hours after the last, and yet the urethra may have been infected by the exposure a week previous.

In arriving at an accurate diagnosis between these two infections, one must resort to the culture-tube. It is well known that the gonococcus is very difficult to cultivate and will grow only upon special media and in proper environment, whereas the *monococcus catarrhalis* grows rapidly upon almost any media; within twenty-four hours the culture will show a profuse and abundant growth.

Why this lengthy discussion upon *monococcus catarrhalis* infection? We wish to make clear the differentiation and symptomatic characteristics. We believe this condition is frequently mistaken for gonorrhea. In the majority of cases, when the discharge is cleared up in a few days with simple treatment and the surgeon flatters himself on his ability to handle cases of gonorrhea, he may have been dealing with this simple infection.

Other conditions which produce discharge from the urethra are intraurethral chancre and acute exacerbations of chronic urethritis, prostatitis, and similar conditions which have been considered healed. It is many times difficult to diagnose urethral chancre from the clinical evidence, but the microscope and culture again play an important role. The Wassermann reac-

\*Read before Southern Minnesota Medical Association, Fairmont, Minn., June, 1920.

tion will not be of help as it may be too early for this test to show.

Presuming, therefore, that we have a typical, clear-cut case of urethritis, with a well defined history and a characteristic symptomatology, discharge of pus from the meatus, which is red, swollen and edematous, urethral burning on micturition, with a peculiar drawing sensation along the canal, with diplococci found in the pus microscopically. These are Gram-negative, intracellular, will not grow on ordinary media within twenty-four hours and do grow upon special media. Then, and then only, it is certain that we are dealing with a specific urethritis.

From the complications and sequelae of gonorrhea which come under the care of the specialist for treatment it is evident the treatment of acute anterior gonorrhea is either unskillful, ignorant, or both. Both the physician and the patient may be in error. When some of our modern teaching regarding treatment of gonorrhea is both illogic and unscientific, what can be expected. Rules are laid down whereby the physician is instructed to never begin local treatment of acute gonorrhea until the acute symptoms have abated. This method has come down to us through a decade or more of teaching, and has done more harm than anything else in preventing scientific advancement in this work.

We have to deal with an infection produced by a specific organism which soon burrows into the underlying structures and there produces marked pathologic changes. Why, therefore, should treatment be delayed? Delay surely increases the area of infected mucosa and also endangers the posterior urethra to infection. Involvement also of the more important structures, as the prostate, seminal vesicle, and epididymis, which will surely follow, may produce serious complications and grave sequelae.

It has been the teaching, also, that posterior urethritis should *not be considered a complication*, but is the natural course of the disease. This is absolutely true if the case is allowed to progress without adequate treatment. From observation and treatment of many cases, we disagree with this teaching. We thoroughly believe that with proper treatment posterior involvement will rarely occur and we are also thoroughly convinced that posterior urethritis should be con-

sidered a *complication* and a very annoying and serious one at that.

What do we mean by adequate treatment?

We have said above that we have to deal with a specific infection which usually is a surface infection early, localized in a small area in the anterior urethra which ordinarily can readily be reached with local applications. There are no logical reasons why we should treat gonorrhea otherwise than surgically. The patients should be instructed to consult the physician just as soon as possible after he has noticed his discharge, thus preventing him from taking treatment suggested by friends or prescribed by druggists to his detriment.

*Treatment should be administered at the earliest possible moment, just as soon as the patient presents himself and as soon as the diagnosis is properly made.* It has been our practice for many years to begin treatment immediately. This consists in hand injections, always administered personally and never left to the patient, unless the circumstances are most extraordinary even though the symptoms are only a few hours duration.

*The earlier the treatment is begun, the shorter the duration of the attack and the less liability to complications and sequelae.* The reason for haste in the treatment of these cases is apparent. The sooner the gonococci are attacked the better for the urogenital tract of the patient.

The reason for personal administration of these injections is the total lack of experience and judgment of the patient necessary for the proper technique, no matter how capable the patient may think himself. We have never seen a patient give himself an injection properly. It is a rare occurrence for the physician to carefully instruct the patient in the proper method to employ, and, even then, the patient is very liable to be careless about following his instruction. Is it any wonder then that the patient who treats himself invariably does himself more harm than good?

The *modus operandi* as followed in our practice is simple but strenuous. The patient is instructed, after slides have been made for examination, to pass his urine into two glasses, six or eight ounces in the first and the balance in the second. If the urine in the first glass is cloudy and opaque and the second clear, one can,

with a reasonable degree of certainty, depend upon the fact that the anterior urethra only is involved.

The patient is then placed upon the table in the dorsal position. The penis is examined, particularly as to the meatus. If this is below 16 F. a meatotomy must be done immediately, cutting the meatus up to 28 or 30. This will prevent blocking or the discharge and will reduce the chances of posterior infection to a minimum.

If everything is normal, an injection is given into the anterior urethra with the use of a syringe which holds about 6 to 8 c.c. This is fitted with a detachable soft rubber nozzle. These nozzles can be easily sterilized by boiling, thereby overcoming the danger of contamination.

The penis is grasped by the left hand, the meatus separated by the thumb and forefinger, the nozzle gently inserted and the injection allowed to gently and slowly trickle into the canal. No force is necessary. In fact, it is contraindicated. The anterior canal is filled to slight dilatation, which can be readily felt by the fingers of the hand grasping the penis as close to the meatus as possible, with just sufficient pressure to retain the fluid. He holds the injection within the urethra for at least ten minutes. The injection is allowed to pass out into gauze or cotton and a protecting gauze covering placed over the meatus. The patient is instructed to hold the urine for at least two hours after treatment.

In severe cases the patient is instructed to return three times daily for treatment. In ordinary cases twice daily will suffice. The solutions that are employed for the infection may be any of the milder silver salts as protargol, 1 to 2 per cent; argyrol, in full strength; albargin, 1 to 2 per cent, etc. We have employed as routine for eight or ten years 2 per cent solution of nargol and found it most satisfactory. The treatments for the second day are usually the same as for the first. The discharge should be examined microscopically daily, and when the discharge has ceased, with no evidence of gonococci in the shreds in the urine, with only a few pus and epithelial cells, the treatment should be changed. When this occurs the condition of the urethra needs stimulation to restore it to the proper tone, as there is lowered urethral vitality. Here we employ anterior irrigations of hot potassium permanganate solution, 1-8000;

zinc-sulphate solution, 1-6000; picric acid, 1-8000. Generally we have better results with potassium permanganate as a routine. In a few days, with this form of treatment given daily, we see the shreds and particles rapidly disappear from the urine.

If the treatment is carefully followed as here outlined, where the infection is primarily anterior the posterior urethra will rarely become involved and the patient will be saved from the annoyance, discomfort and dangers of posterior urethritis, and the duration of the attack will be surprisingly short. It is remarkable, in many cases, to see the benefits of this treatment. It must not be forgotten that it is absolutely criminal to instrumentate an acutely inflamed urethra.

The most frequent complication of acute anterior urethritis is involvement of the posterior canal. Here, as well as in the anterior urethra, we must exercise every effort to clean up the condition as rapidly as possible to prevent progress of the infection.

Posterior infection is usually readily diagnosed, both from the symptoms and from the characteristic appearance of the urine in the tow-glass test. The patient will complain of a frequency of urination as often as every fifteen or twenty minutes, as well as an inability to hold the urine when the desire strikes him. The tow-glass test will show that both glasses contain pus, are cloudy, and usually opaque.

The treatment here is similar to that in the anterior urethra. Hand injections are used, never, however, administered by the patient. Here we employ a syringe of 20 cc. capacity, fitted with a soft-rubber nozzle, so that not only is the anterior urethra filled, but we have sufficient to fill the posterior urethra as well. The injection is gently given and the patient is told to make the endeavor of passing the urine. This produces muscle relaxation and the solution will run easily, without using force, into the posterior canal. The penis is grasped similarly as in anterior treatment. The entire urethra is filled. The meatus is held by the patient to prevent the solution from running from the urethra. This is held for from five to ten minutes. It will be necessary to give two or three treatments daily. The same solutions are employed that are used in the treatment of anterior conditions. The

posterior involvement will clear up surprisingly. The symptoms may entirely disappear after a day or two of treatment and the second urine becomes clear again. Just as soon as this occurs stop posterior injections and give all of your attention to the anterior urethra.

Aside from posterior urethritis, the most frequent complications of anterior urethritis are phimosis, paraphimosis, peri-urethritis, abscess of the glans of Litre, and occasionally inguinal adenitis of a suppurative variety. Phimosis may occur where the prepuce is unduly long or unduly tight. The part becomes swollen and edematous, and it is difficult or impossible to retract the prepuce over the glans. Hot applications are of service. If the edema is severe, multiple punctures with a needle will relieve the condition. If the swelling continues and the phimosis is not reduced by any of these methods, we do not hesitate to do a dorsal slit or a complete circumcision. Paraphimosis is fortunately not so common a complication; here the prepuce is retracted well over the glans, becomes edematous and swollen, and cannot be reduced. Manipulations will sometimes bring it forward. This may be done by grasping the penis between the first two fingers of each hand and by gently pulling forward with the fingers and pressing upon the glans with the thumbs. Here, also, hot applications and multiple punctures may be of service. If it is impossible to reduce it and there is much constriction on the dorsal surface produced by the swelling, it will then become necessary to cut the constricting band. This is best done on a grooved director so that the dorsal vessels will not be injured. If the constriction is not relieved, marked pressure of the dorsal vessels is apt to produce gangrene, sloughing and marked infection, a very serious complication.

Since the advent of beginning treatment of the acute stage early, periurethritis and abscess of the glans of Litre are not encountered so commonly. However, occasionally, no matter what precautions are taken, the surrounding tissues of the urethra may become infected, and we then have the patient complaining of those annoying symptoms, painful erections, with bending of the organ, indicating chordee. For relief of this condition the active treatment of the urethritis is pushed. The patient is told to immerse the

penis in hot water twice daily for from ten to fifteen minutes. At night he may apply an ointment composed of equal parts of unguentum belladonnae and lanolin to the under surface of the penis. If the chordee is persistent, occasionally it will be necessary to use opium and belladonna suppositories at bed time for the relief of the pain. Fortunately the condition clears up rapidly as the infection of the urethra clears up. Rarely do we see periurethral abscesses owing to the treatment that is followed, but they do, occasionally, develop and it is usually the glans of Litre at the fossa navicularis that becomes involved. These soon form small abscesses, which are evident on either side of the frenum at the corona. The pain is usually severe and produces considerable annoyance to the patient. When this occurs it is always best to incise externally and drain after a thorough application of iodine, or carbolic followed with alcohol. Internal incision through the urethra is not employed, as a rule, for fear of further infection or extravasation of urine. By all means open and drain; do not allow these abscesses to rupture spontaneously, as the end result will be a urethral fistula, which is very difficult to heal. As a rule, the radical operation will be followed by perfect healing.

Inguinal adenitis is an occasional complication, but suppuration is usually aborted. Application of iodine will usually suffice. If, however, suppuration does occur, free incision with drainage is indicated.

Another complication of anterior urethritis which occasionally makes itself evident, particularly where the treatment of acute anterior gonorrhea has begun too late, is that of acute infection of Cowper's gland, acute Cowperitis. This, for the most part, is a late manifestation. The patient complains of pain, either mild or severe, with a fullness in the perineum, made worse by exercise or by defecation. The swelling in the gland may readily be mapped out with the forefinger in the rectum and the thumb on the perineum. When this condition occurs the patient should be put to bed, and hot applications applied to the perineum; opium and belladonna suppositories per rectum to relieve the pain if it is severe. It is recommended by some of the text books to stop all local treatment of the urethral condition. We cannot see the logic of

this suggestion. We prefer to continue treatment, being sure that the urethra is well filled at each injection. We are thoroughly convinced that the dangers of abscess formation in this location will be less if urethral treatment is continued. However, abscess will sometimes occur, no matter what precautions are taken. The onset is usually ushered in with a chill, with increased swelling and pain, followed by a rise in temperature from 101 to 104 F. Redness and swelling may soon be recognized in the perineum. Owing to the non-elastic structures of the perineum there may be marked pressure which will result in urinary disturbances, characterized by frequency of micturition with pain, with difficulty in starting the stream, or even occasionally with complete retention, if proper treatment is not instituted. The abscess may rupture spontaneously either in the urethra, rectum or perineum. This should not be allowed to occur, as fistulae will follow which are difficult to cure. Abscess of Cowper's gland should be treated similarly to an abscess elsewhere, by free incision and drainage. The incision should be made through the perineum and may, as a rule, be done under local anesthesia. Postoperative treatment consists in overcoming the infection and allowing it to heal gradually from the bottom outwards. This may take a week or ten days to accomplish. At the same time local treatment must be continued *per urethra*.

One of the most dreaded complications which may arise during an attack of acute gonorrhea, is that of gonorrheal arthritis. This usually arises during the acute state of the urethral involvement, most commonly during the third week of the infection. We have not seen gonorrheal arthritis develop in a case of acute infection where we have begun treatment within twenty-four hours after the discharge began—another argument for the early commencement of treatment in these cases.

The condition may develop in one joint or may be polyarticular. Space will not allow us to go into detail regarding various forms and varieties of this condition which are demonstrated clinically. So soon as the pain and swelling are noticed by the patient he should be put to bed and absolute rest of the part affected instituted, which is best accomplished by complete extension. Extension will produce marked

benefit, relieve the pain and separate the articular surface in the joint, a valuable feature to be considered.

Strenuous treatment of the existing urethritis must be carried out. Local treatment to the parts, as the application of heat or ointment, may relieve the pain to a degree. Internally the salicylates have been recommended. We depend almost entirely upon the use of anti-gonococcal serum, which we consider almost a specific. However, we are in the habit of administering larger doses than are usually recommended. It is not uncommon to inject 5 to 10 c.c. as an initial dose, to be repeated within twelve hours if necessary, followed by daily doses of 2 c.c. if the condition is not markedly improved. We have seen a severely affected joint causing the patient considerable discomfort clear up from one injection of serum. *Do not forget to treat the local urethral infection. This is absolutely essential.*

Systemic gonorrheal infection, as endocarditis or myocarditis, fortunately, is rare. The gonococcus may be found in the blood, and bacterial growths may be made from blood culture. Here, absolute rest is essential. Marked attention to the urethral condition and the serum form of treatment are indicated. Medical treatment is also necessary.

We have already shown that a posterior urethritis is a complication well to be avoided, as the adjacent tissues may become involved. We know of no condition which may arise which will give the physician more concern and produce greater discomfort to the patient than acute infection of the prostate.

Infection of the prostate is readily demonstrated from the clinical symptoms and signs. Here the symptoms associated with acute posterior urethritis become exaggerated, the urinary disturbances are more marked, with greater pain and burning associated with the act of micturition. The urine is always, both the first and second glass, quite cloudy, due to the pus; besides, there is usually a dull pain in the perineum and in the rectum, the patient complaining of a sensation of mass in the rectum. There is always a difficulty of urination, which may even develop into complete retention. The diagnosis can usually be confirmed by rectal examination. The prostate can be felt to be enlarged, hot, soft, and exceedingly tender and sensitive

on pressure. The general size and shape of the organ depend upon the variety of involvement. The onset may be accompanied with a chill, followed by fever. Some cases of acute prostatitis fortunately undergo resolution with a rapid cessation of symptoms, but the usual development tends toward abscess, chronic prostatitis, or both.

Here, as with other complications, we believe that the greatest good follows the continuation of our local urethral treatment rather than the cessation of treatment as recommended by some. When the prostate becomes acutely infected, the patient should be put to bed. Hot sitz baths are followed by relief. Hot rectal injections are excellent; opium and belladonna suppositories, if the pain is great. *Massage of the prostate is absolutely contra-indicated.*

If retention occurs and catheterization is necessary, the procedure should be done with the greatest care, as severe trauma may follow careless instrumentation. It is better to leave the catheter in place than take a chance of repeated instrumentations.

The development of a prostatic abscess is usually associated with a rather severe chill, followed by temperature as high as 104 or 105 F. The urinary symptoms are all increased. The patient has more pain. The mass-like sensation of the rectum is increased. Examination per rectum shows a large, very soft, usually slightly fluctuating mass involving the prostate, either one or both lobes.

Just so soon as the diagnosis is made, treatment should be carried out, consisting in a radical surgical procedure. The abscess may go on to spontaneous rupture, but this is not desired; fortunately when this occurs it usually ruptures into the urethra, evacuation takes place, and an ultimate cure follows only after a prolonged chronic stage with much treatment. Occasionally, the abscess ruptures into the rectum. This is undesirable as the result may be urethro-rectal fistula, one of the most difficult conditions to remedy that we have in genito-urinary surgery. It has been suggested that the abscess can be opened intraurethrally. This procedure we do not recommend, as a long, chronic stage may ensue. We prefer to attack the abscess through the perineum, incising the prostatic capsule and evacuating the pus, followed by drainage. We are thoroughly convinced that the condition of

the prostate will clear up very much more rapidly by following this technique. Here, too, we continue our anteroposterior injections for the treatments of the urethral conditions, thus endeavoring to eradicate the cause.

Acute seminal vesiculitis is not an uncommon condition associated with posterior urethritis and prostatitis. The symptoms of the condition are both constitutional and local. The former are demonstrated in a slight febrile movement with accelerated pulse, headache, constipation, and a general feeling of depression. The local symptoms are referable to the urogenital tract. There is usually pain in the perineum, a sense of fullness of the bladder, which continues even when that viscus is emptied, producing thereby considerable tenesmus. Pain may be referred to the sacral or iliac region. Pain on the right side may be mistaken for appendicitis. Conditions of the vesicles must always be considered in obscure abdominal pain. One of the most characteristic symptoms is increased frequency of micturition, both diurnally and nocturnally.

The treatment of acute vesiculitis is very similar to that recommended in acute prostatitis; hot sitz bath two or three times daily. Hot application to the rectum with the use of the psychrophore gives relief frequently. We do not believe that massage of the vesicles in acute infections is warranted. Incision and drainage of the vesicles in this stage of the infection are usually not indicated. Fortunately the vesicles are not so frequently infected as the prostate. Here we have a posterior urethritis associated, so we must continue treatment of the urethral condition.

Acute epididymitis, either unilateral or bilateral, is one of the most dreaded consequences of posterior urethritis, and one which is exceedingly annoying to the patient, as it is accompanied with great pain, which usually incapacitates the patient. Involvement of the epididymis usually occurs during the second or early part of the third week or later.

Associated with the symptoms of posterior urethritis we have the patient complaining of a pain in the groin, followed by the same sensation in the testicle. Soon the pain becomes severe, with marked swelling of the epididymis. The pain is increased by the patient being on his feet or taking exercise. Usually there is not

much fever, not over 100, unless there is supuration; then the fever may reach 103 or 104. The diagnosis is relatively easy: pain and swelling in the part following an acute gonorrhea. Per rectum the ampulla of the vesicle can be palpated readily.

We will divide the treatment into prophylactic, local and surgical and will endeavor to bring to your attention some of the various forms of treatment that have been recommended for this condition. To our mind prophylactic treatment is of the utmost importance, for if this serious complication can be prevented, we are thus able to shorten the original attack and reduce to a minimum the possibility of such sequelae as sterility, chronic prostatitis and vesiculitis, and the tendency to recurrences of the inflammatory condition of the epididymis.

The prophylactic treatment consists in preventing posterior urethritis and, if this condition is already evident when the patient presents himself, strenuous treatment of the posterior urethra must follow. As epididymitis is a later complication, we have another forceful argument for beginning treatment of the original acute anterior urethritis at the earliest moment. If, however, epididymitis exists, local treatment of the anteroposterior urethra should begin at once. It is our practice to give our patients daily treatments for the urethral condition with hand injections already described. It is better, of course, to have your patient confined in bed, but it is difficult at times to have them do this if they can be possibly kept on their feet. We have tried to devise a treatment that will allow the patient to attend to his daily vocation. This consists in local applications with support of the testes. If the case is seen early, we apply upon gauze the compound iodine ointment, which is placed upon the affected side of the scrotum, completely surrounding the affected area, and the scrotum is then well elevated by a suspensory bandage which we make for this purpose.

The compound iodine ointment is left in place until there is evidence of a distinct burning sensation. It is then removed, the scrotal surface cleansed with olive oil, and the ointment of lead iodine is profusely applied.

It must be remembered that the posterior urethral infection is the cause of the trouble, and that attention must be given this condition. Care,

however, must be practiced in giving the anteroposterior injection. In the majority of cases this form of treatment will suffice and the patient's condition will soon be improved.

There are, however, a small proportion of cases that develop unusually severe types of infection, where it becomes necessary to place the patient at complete rest. In some of these cases, marked suppuration occurs, and here we must depend upon free incision and drainage for evacuation of the pus.

It has been recommended by some that every case of epididymitis is a surgical case, requiring exposure of the affected epididymis with evacuation of the pus, which many times, is only a small quantity. We thoroughly believe that the open operation would be the treatment of choice in most of these cases. Acute epididymitis is rather a rare occurrence in our practice. This proves that early treatment, applied by the surgeon himself, prevents, in the majority of cases, acute complications involving the deep urethra and its adjacent organs.

A further progression of the infection from the posterior urethra into the bladder may be a complication of gonorrheal urethritis which will be accompanied by symptoms of the most annoying character. These are both constitutional and local. The former group are characterized by a mild, febrile movement, headache, backache, suprapubic pain and general malaise. The local symptoms are all urinary, shown by marked frequency of urination, with pain accompanying the act of micturition and continuing after the bladder is emptied; the frequency may be as often as every fifteen minutes, both by day and night. There may be both a microscopic hematuria. A few drops of blood may follow the act of micturition. Examination shows that both of the specimens by the two glass test will contain pus; the second will usually show more pus than the first. If we use three glasses instead of two, all three samples will contain pus, the third will contain more pus than the other two, usually.

Palpation over the suprapubic region elicits the facts that the bladder is tender and sensitive. Palpation of the rectum may show a normal prostate and vesicles, or there may be associated an inflammatory process of these organs.

The treatment of cystitis of gonorrheal origin

requires great care. The patient should be put to bed upon a liquid diet. The bowels should be thoroughly evacuated. Hot compresses over the suprapubic region may give relief. Local treatment is of the greatest importance. It must be remembered that instrumentation of an acutely inflamed urethra or bladder is absolutely not to be considered, as it will increase the virulence of the condition. Treatment of the bladder will be just as easy as treatment of the anteroposterior urethra, and consists of hand injections given by the surgeon of a quantity sufficiently large to completely fill the urethra and allow several cubic centimeters to run into the bladder, to be retained so long as the patient can comfortably do so.

The injection should be administered at least twice daily. Internally sodium benzoate, gr.x., three times daily will be of service. Treatment will usually be followed by good results, and the acute condition rapidly disappears with a clearing up of the symptoms.

No matter what treatment is instituted, the bladder condition frequently may not improve and will develop into a chronic type of inflammation.

The one great important feature with which we will conclude our discussion is: "When are we sure that a patient is cured of his gonorrhea and when is it safe for him to marry?"

These questions are not only important from the standpoint of the physician, but from the standpoint of the layman as well. These problems are brought to us daily by patients who have had past trouble and are anxious to marry. These patients are put through the regular routine examination. If there are lesions at any point in the urogenital tract which are productive of symptoms, or if there is pus found in the urine or in the shreds when they may be seen in the sample, we absolutely forbid the patient marrying.

*We usually discharge a patient as cured when the urine is free from pus and bacteria and when there are no lesions to be found in the urogenital tract after repeated examinations. We always use the gonorrheal complement-fixation test. We feel that this test is as satisfactory for gonorrhea as the Wassermann is for syphilis. It is our usual practice to discharge patients when all pus and bacteria have disappeared and the comple-*

*ment fixation test is negative. We give our consent to marriage when these conditions remain negative over a period of three months. During this time the patient lives his ordinary method of life and is examined about three times. If we find negative results over this period, then we can feel sure that his marriage will be safe.*

In conclusion we wish to state that we have endeavored to show that most complications and sequelae of gonorrhea are absolutely aborted in the vast majority of cases by the proper treatment of the acute type. If treatment is followed as outlined here the short duration of the attack and absence of complications will be particularly gratifying to both the patient and the surgeon.

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### CYSTS OF THE PANCREAS\*

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Most investigators are agreed that true cysts of the pancreas originate in the substance of the gland and are formed where an obstruction to the outflow of pancreatic secretion causes a retention of the fluid and a dilatation of the ducts or acini. Although Opie and others have shown that ligation of the pancreatic ducts in man and in animals results in chronic inflammation with little or no dilatation they also uphold this theory and suggest that in the formation of the cysts the obstruction may be partial or that it may be intermittent. Pancreatic cysts are always associated with pancreatitis and some authors believe (Tilger) that their formation is the result of the inflammation scars form which may occlude the ducts. The shreds of pancreatic tissue often found in the cystic contents seem to support this view. However, since chronic pancreatitis is always present with cysts it is difficult to decide whether the inflammation has to do with the etiology or whether it is a result of the cysts. In support of the contention of Archibald that pancreatitis may be the result of bile entering the pancreatic duct and that these cysts are later the result of the pancreatitis, I have endeavored in several cases to obtain bile from the contents,

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but so far I have failed. Archibald, I believe, did obtain bile from one pancreatic cyst. However, before it could rightly be assumed that the occurrence of bile in the pancreatic cyst means that the cyst has formed as a result of pancreatitis caused by bile entering the pancreatic duct it would be necessary to prove that there was no communication between the cyst cavity and one of the bile ducts. Injecting bile into the pancreatic duct in an animal sets up a definite pancreatitis, and I believe that many of the cases of chronic pancreatitis might be traced to the entrance of bile into the pancreatic duct; however, cysts form in the pancreas in a very small number of these cases.

A few pancreatic cysts are new growths or cystadenomas. These form much as do the cystadenomas of the thyroid and of the ovary and are papillary in-growths or adenomatous cysts. Korte collected thirteen of these cases. Fitz reported nine cases, eight occurring in women.

Cystic tumors of the pancreas rarely become malignant. We have observed two malignant cases. A few malignant papillary cystadenomas have been reported in which the malignancy had extended to the peritoneum, giving the appearance of nodules on the peritoneum found in similar tumors of the ovary.

Hydatid cysts have been found in the pancreas although they are rare in countries where these cysts are common in other portions of the body.

A few cases have been reported of congenital cystic disease of the pancreas with congenital cysts in the kidneys and liver. We have encountered this condition once in a patient past fifty years of age and in reasonably good health. In this patient the cysts were most numerous in the liver, although there were cysts in both kidneys and small ones in the pancreas. The cysts in the liver became large and were drained on two occasions about two years apart. Aside from this the patient was not inconvenienced.

Hemorrhage into the tissues of the pancreas occurs frequently and as a result cysts may form. The lining of the cyst sac in these cases probably does not have the usual layer of epithelial cells but a layer of connective tissue. That a cyst contains blood and is without an epithelial lining does not necessarily mean that

it formed following a hemorrhage, since frequently a retention cyst contains blood from a vessel that has ruptured because of a corroding effect of the pancreatic juice on the vessel wall, and since the epithelial lining also may have been destroyed by the influence of the pancreatic secretion.

The basis of this paper is a series of forty-one cases of cysts of the pancreas. This includes all the cases that I was able to find in the records of our clinic. In thirty-eight of the forty-one cases operation was performed for the cysts, and in three cases the cysts were discovered during an operation for some other condition. In many of the cases it was difficult for the operator to locate the cysts with relation to the surrounding structures and to determine whether they were true pancreatic cysts or so-called pseudocysts. The exact nature of the true cyst could not be determined in many cases as it was impossible to demonstrate obstruction to the ducts such as would cause retention cysts and since in most cases the destruction of the tissues within the cysts was so great that we could not know whether the tumors were cystadenomas or simple cysts. It seems to me that these distinctions will usually have to be made at necropsy. In only two of our cases were the tumors malignant or associated with malignancy of the pancreas. In one case we could not operate for the cyst because of a carcinoma of the stomach. There was one dermoid cyst. I was unable to find mention in the literature of dermoids in the pancreas, but there is no question that this cyst was a dermoid as it contained hair and one tooth and the operator felt certain that the cyst arose in the tissue in the body and tail of the pancreas. It was possible to remove the entire cyst and affect a cure. One true hemorrhagic cyst was found, although there was no history of trauma in this case; the condition appeared soon after confinement.

Trauma seems to play a definite part in the etiology of pancreatic cysts, according to Korte's report in about 28 per cent. Undoubtedly many of the resulting cysts are of the hemorrhagic type. In one case reported by Richardson a pancreatic duct had been torn by an external injury. The cyst usually appears soon after the injury although in some instances

it evidently develops slowly and does not make its appearance for several months. Trauma seemed to be an etiologic factor in only one case of our series; the cyst occurred two months after the injury and had been drained three times when we saw the patient.

The formation of pseudocysts, or false cysts of the pancreas is ascribed to the unusual action of the pancreatic fluid. They may form in the substance of the pancreas, a result of degeneration. Their walls are very thick and composed of fibrous tissue with no epithelial lining, which, however, does not distinguish this particular type of cyst. They present higher in the abdomen than the true cysts, and are not so closely attached to the pancreas, but in all cases in my experience the surrounding tissues were so densely matted that it was difficult to establish the relation to the approximating structures. According to Opie the formation and increase in size of the pseudocysts is due to the irritating products of the pancreas. Their formation has also been ascribed to a collection of fluid in the lesser peritoneal cavity.

The fluid contents of the pancreatic cyst may be light-colored and viscid, containing much mucin, although more often it is dark-colored from old blood or red from fresh blood. The fluid contains epithelial cells, fat, sometimes bile, crystals, blood cells, and necrotic tissue. One or more of the pancreatic enzymes are usually present and may be used as a distinguishing feature because if the fluid will coagulate egg-albumin or split starch it is probably pancreatic in origin. In most of the cases in which we have operated the contents of the cyst were very bloody, and usually as soon as any manipulation in the cyst is begun, bleeding is very free.

#### CLINICAL FEATURES

Pancreatic cysts may occur at any age, but they are most often seen in persons about middle life. Several cases have been reported in children a few months old and a few in persons more than 70. In our series the ages varied from 21 to 68. There were twenty-four females and seventeen males, the usual preponderance of females. The tumor presents as a rounded or oval semi-fluctuating mass at the umbilicus, in the midline just above it, or just to the left

of the midline. These cysts vary greatly in size. Some occupy almost the entire abdomen and pelvis and frequently in the larger cysts it is most difficult to distinguish the origin of the tumor, and the cyst is often so tense that it is impossible to obtain any fluctuation. It is usually fixed although when it arises near the tail of the pancreas it is movable and more to the left side. Rarely a cyst of the pancreas presents on the right side of the midline. As the cyst increases in size and extends forward it comes in contact with the anterior abdominal wall. In assuming this position, according to Korte, it most often crowds the stomach upward and the colon downward and presents between the two, behind the mesocolon. In several cases of our series the cyst arose high in the pancreas and as it extended forward, it presented above the stomach. In this position it tends to crowd the stomach downward and the liver upward. There is a third position in which the cyst extends forward between the layers of the transverse mesocolon, and the colon lies between the cyst and the abdominal wall or is crowded just above or just below the tumor (Figs. 1, 2, and 3).

The symptoms of the cyst usually are recorded as due to its pressure on adjoining organs. Pain is nearly always present, and in our series of cases was more pronounced than in most of those formerly reported. If the tumor becomes large it presses on the stomach, causing indigestion and vomiting. Some of our patients had severe seizures of vomiting which we attributed to an accompanying pancreatitis rather than to pressure. Pressure may be exerted on the diaphragm, colon, and bile ducts. Jaundice is not usually present in these cases. Loss of weight was considerable in many instances. Glycosuria and diabetes apparently follow after severe chronic pancreatitis. Osle collected 134 cases from the literature, only nine of which were associated with diabetes.

A review of the clinical histories in our forty-one cases shows that the syndrome varies greatly. The time of onset of the symptoms varied from three weeks to twenty-five years. I was much impressed with the frequency of associated gallbladder disease. Little mention has been made of this in former observations but of our forty-one cases gallstones were found

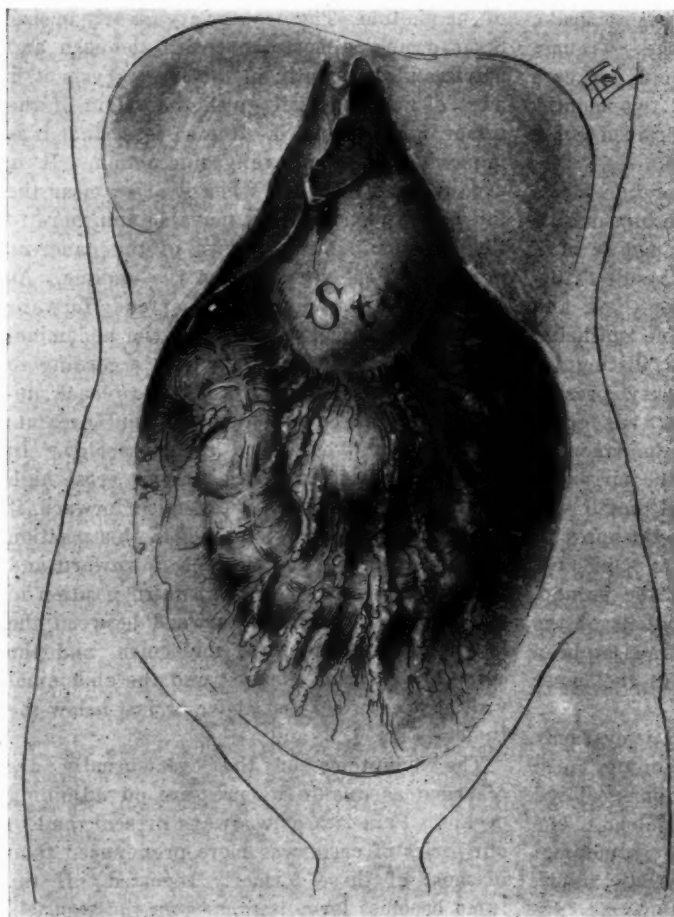


Fig. 1. Pancreatic cyst between the liver and the stomach, covered anteriorly by gastrohepatic omentum.

in twelve and a definite cholecystitis without stones in two others. In addition, in three cases operation for gallstones had been performed previously so that in seventeen of forty-one cases disease of the gallbladder was definite. This proportion seems to be large enough to warrant a consideration of a possible association between the two conditions.

Two of our patients had diabetes at the time of the operation for the cyst; both lived for about one year and then died in diabetic coma. One other patient developed diabetes after the operation. Four patients had sugar in the urine which cleared up on treatment.

The diagnosis is often doubtful and it may be necessary to postpone it until after an explora-

tion has been made. Mesenteric cyst, ovarian cyst, tumors of the kidney and spleen, and all forms of retroperitoneal tumors must be differentiated. Experience is probably the greatest aid and many of these tumors may be distinguished by their feel. The x-ray may be of great aid, especially in eliminating other lesions.

#### TREATMENT

Not much change has been made in the treatment of pancreatic cysts since operation was first performed for the condition. The ideal plan is to enucleate the cyst from the pancreas and its surrounding structures and to remove it entire, but because of its intimate attachment often this is not feasible. Bleeding is always pronounced and if too much of the pancreas is removed, diabetes may ensue. If the cyst is so situated, especially if in the tail of the gland, that removal is possible, that is the procedure of choice. More often it is advisable to open the cyst and drain the fluid after the wall has been sutured to the parietal peritoneum or after gauze packs

have been so placed as to protect the surrounding structures from the irritating and corroding fluid. If it can be done it is always best to suture the wall of the cyst to the parietal peritoneum. Following these procedures, the drainage is usually prolonged and often excessive and is apt to be very irritating to the surrounding tissues. Some wounds have been known to drain for several years before closing. When it is possible, a tube drain should be placed in the cyst cavity so that it will catch all of the fluid which can be drained into a receptacle without coming in contact with the tissues. The drainage of course continues until the mucous membrane lining has been destroyed completely. Attempts have been made to shorten the

drainage period by injecting irritating fluids into the cyst sac. This seems rather dangerous because of the possibility of inducing bleeding and destroying so much of the pancreas that diabetes develops. In some instances the cysts are multiple and two or more operations are required. In others the drainage tract may close before the cyst cavity has been destroyed and the cyst reform so that secondary drainage is necessary. It seems advisable whenever possible to strip out any mucous membrane lining of the cyst that can be removed without inducing much hemorrhage. I have done this in a number of cases in which it did not seem best to attempt to enucleate the entire cyst and I am of the impression that it has shortened the convalescence.

Drainage of the cyst cavity alone was performed in thirty-one of our cases, enucleation of the lining membrane in three cases, removal of the cyst entire in five cases, and no operation on the cyst in two cases. The results of the operations, considering the seriousness of the condition, have been very gratifying. The cyst should be removed if this is to be done safely. If it does not seem best to attempt removal, but if the mucous membrane is not too intimately attached to the surrounding tissues, it can be enucleated entirely or in part. Apparently the only point accomplished by the more radical procedures is shortening the convalescence. From our series I judge that those patients who had drainage only ultimately recovered completely as well as those from whom the cysts had been removed. In some cases the foul, watery irritating discharge from the cyst continues for a long time and causes much inconvenience and suffering, but eventually it stops. Most of the wounds drain for sev-

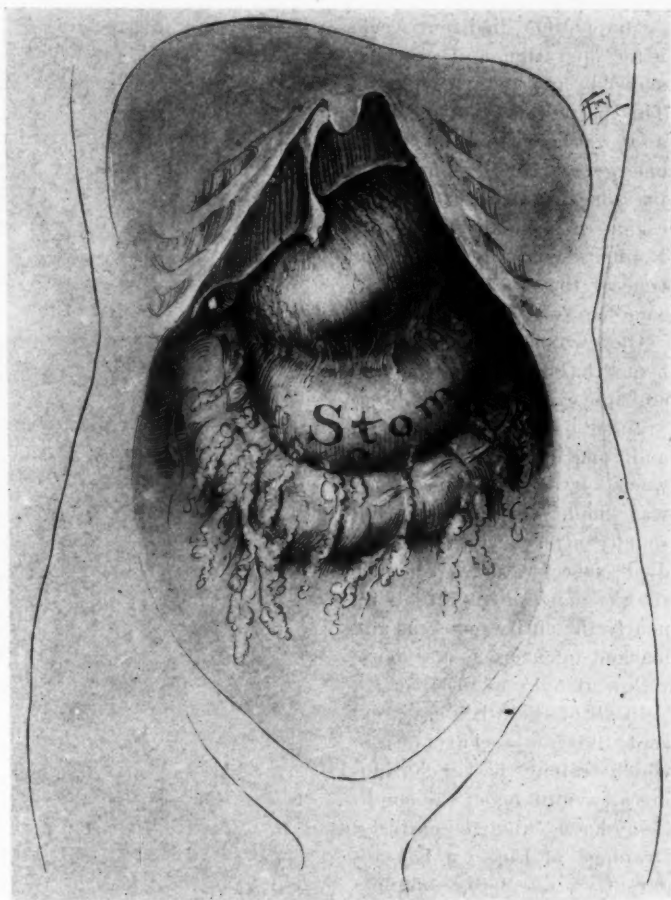


Fig. 2. Pancreatic cyst below the stomach, covered by transverse colon.

eral weeks, some for several months, and a few have been reported to have drained for years.

#### RESULTS OF TREATMENT

In our forty-one cases, there were no deaths from the operation. In many there was extensive fat necrosis, but apparently this is strictly a chemical change and not due to bacteria, as in no instance was there evidence of peritonitis.

One patient died a little more than one month following the operation and the necropsy showed a carcinoma of the pancreas and liver; the condition was, of course, discovered at the time of the operation. In one other case, carcinoma was found at the time of the operation and the patient lived for several months.

One patient died four weeks after operation and necropsy showed an acute nephritis. This patient was an alcoholic and was operated on in an emergency for dyspnea and pressure from the size and location of the pancreatic cyst. Nephritis was present at the time of the operation and became acute a few weeks later.

One woman had an acute hemorrhagic pancreatitis and multiple cysts. The cysts were drained but the severe pain and vomiting continued. Five weeks later an enterostomy was made for feeding, but shortly afterward the patient died. Necropsy showed hemorrhagic pancreatitis involving nearly the entire pancreas and marked fat necrosis and acute yellow atrophy of the liver.

In all of the other cases except the few recent ones in which drainage is still continuing all symptoms of the condition have abated entirely. Drainage of the cyst has apparently effected complete cure.

#### CONCLUSIONS

Cysts of the pancreas are not common, do not produce a definite syndrome, and are usually difficult to diagnose.

The association of gallbladder disease with cysts of the pancreas, found in seventeen of this series of forty-one cases, must have some etiologic significance.

Cysts of the pancreas are amenable to surgical procedure. While it may be best to remove them when possible, the results from drainage of the cystic contents are very satisfactory except for the rather prolonged convalescence.

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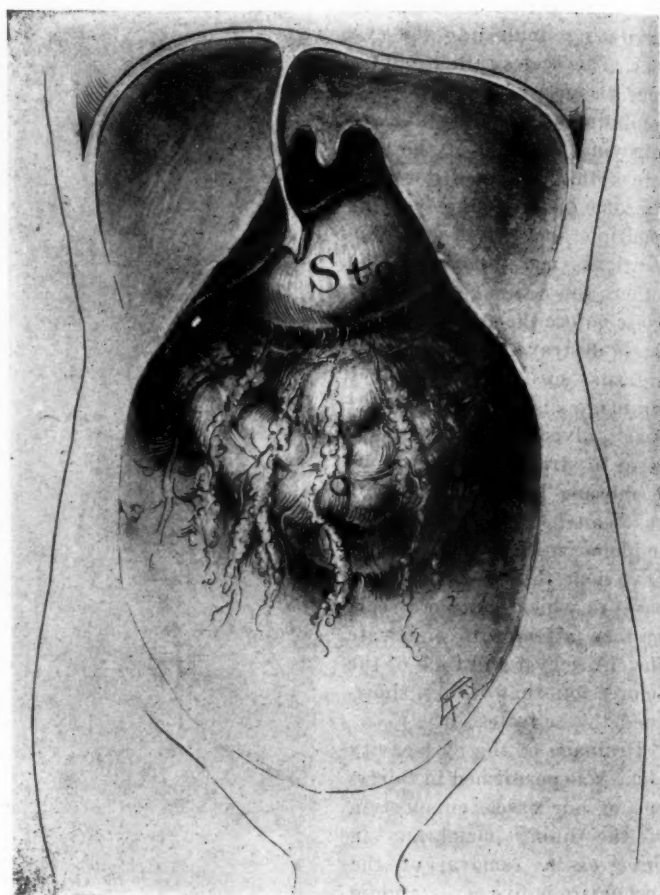


Fig. 3. Pancreatic cyst between the stomach and the colon, covered anteriorly by gastrocolic omentum.

*die Verletzungen des Pankreas*. Stuttgart, Enke, 1898, 258 p.

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#### DISCUSSION

DR. ROBERT EARL, St. Paul: The Society is to be congratulated that Dr. Judd has presented this interesting and instructive paper on this unusual condition. Few surgeons have been able to accumulate an extensive experience with this disease or condition because of its rarity. My personal experience is

limited to one case which I saw about 14 years ago. It occurred in a woman, 40 years of age, who had complained of symptoms for two or three months. She presented herself with the chief complaints of pain and distress in the upper abdomen, with tumor swelling, weakness, and loss of weight. There was no history of injury or any special gastric or biliary disturbances. The tumor felt large and smooth, but it was practically impossible to say whether it was a solid tumor or a cyst during the examination. The late Dr. Lundholm, of St. Paul, saw the case in consultation and we were rather inclined to think we were dealing with some form of retroperitoneal tumor, though a pancreatic tumor was also considered. We advised exploratory laparotomy which was accepted by the patient.

On opening the abdomen we found we had to deal with a tense cyst with the stomach above and the transverse colon below. We packed off the tumor; introduced a trocar and drew off a reddish fluid, after which we opened and explored the inside of the cyst, which seemed to be definitely and decidedly attached to the pancreas. The question of enucleation and extirpation was considered inadvisable because of the firm adhesions, and we felt that the surgical risk would be too great. We drained with gauze and rubber tissue after attaching the edge of the sac to the parietal peritoneum. The fistula drained for about three months. The skin was red and inflamed and for a time we had considerable trouble keeping the patient comfortable. The fistula finally closed, and the last I heard from the patient, two years later, she was still well.

From the experience with one case, I feel that it would be well to emphasize a point which Dr. Judd brought out so emphatically in his paper, namely; in operation if extirpation of the cyst is possible, that is the operation of choice, but from the statistics of Dr. Judd's paper I should infer that there is only a small percentage of cases where it would be considered as safe a surgical procedure to extirpate the gland as to drain even though convalescence would be much prolonged. We must remember in dealing with extensive adhesions in the region of the pancreas that we are dealing with many important structures and many large blood vessels. A distortion of the splenic vessels might occur which would make the situation most difficult. Then, too, the separation of the extensive adhesions and the removal of the cyst in the upper abdomen is, of course, conducive to a great deal more shock than if we are doing the same kind of work in the lower abdomen.

Where the adhesions can be easily separated, this should be done and the cyst enucleated; where difficult of separation, it is undoubtedly a safer procedure to simply drain the cyst.

DR. HARRY P. RITCHIE, St. Paul: In several years of active work associated with Dr. MacLaren, we have had only five of these cases. I do not think any one of them was diagnosed before the abdomen

was opened. One thing that has impressed me as most suggestive is the occurrence of a protrusion in the upper abdomen above the umbilicus and to the left of the midline. We found that a mass in such a position is the most reliable diagnostic sign of pancreatic tumor.

DR. A. T. MANN, Minneapolis: I think the interesting point is that of diagnosis. These tumors are more apt to be in the tail than in the head, though they can occur in any portion of the pancreas, and, of course, they are behind the peritoneum, so when they come up they push the peritoneum with them. The usual protrusion is between the stomach and transverse colon. In only very rare cases do they come up through the lower margins of the mesentery of the transverse colon and push the colon up to the abdominal wall and very rarely do they push down below that and present below the transverse colon. If they come a little higher and push up with a fairly low stomach through the space above the stomach, we have a protrusion slightly higher still, so that practically all the pancreatic cysts which we see and we do not see a great many of them—at least no one man sees a great many of them—occur in the space above the umbilicus. There are very few tumors which present in that upper left part of the abdomen, so that one should have a very strong feeling that he must rule out these pancreatic cysts when there is a tumor presenting in that space.

They tell a little story about Dr. J. Collins Warren who was professor of surgery at Harvard. They had a case in the Massachusetts General Hospital which every man who had seen it failed to diagnose. They decided to do an exploratory operation. The patient was prepared and they were already to make the incision when Dr. Warren walked through the doors. He saw the little swelling above the umbilicus and to the left of the midline and said, "I see you have a pancreatic cyst". They were all very much surprised because they had made a very thorough study in an attempt at differential diagnosis and had failed.

Pancreatic cysts as we find them usually are single and it is rather rare that a movable cyst is encountered. Some of them are traumatic in origin. One of the cases with which I had to deal was the result of trauma. This man was struck in the abdomen with a plank. About three weeks later he had a sore place there and he was slow in getting back to his work, but he went back. About three weeks later he began to complain of indefinite pains in the region of the upper left quadrant of the abdomen and at the end of three months he came to us. I found he had a cyst in the usual place between the stomach and transverse colon. In operating on these cysts if it presents between the stomach and transverse colon one has to cut through that portion of the omentum. Then there is beyond that a layer of peritoneum which one must go through before the cyst is arrived at. This man was drained. The discharge was blood stained at first but later

became clear. Two hundred and fifty cubic centimeters a day were discharged and a careful study showed enzymes of the pancreas. His sinus healed in eighteen months.

DR. R. E. FARR, Minneapolis: We have had one of these cases in the last year which presented no difficulty in diagnosis. The tumor was nearly as large as a basketball, surrounded by peritoneum.

My reason for taking part in the discussion was just to call attention to a little scheme, not new, I believe, but I want to emphasize it once more, of taking care of the skin. A rubber cement in ether painted upon the skin repeatedly will, in many instances, prevent irritation.

DR. ARNOLD SCHWYZER, St. Paul: I do not know that I can add much to the discussion of this paper. The diagnosis is not always so very difficult. When we have a patient coming into the office with a balloned epigastrium we might think there was a distention of the stomach, and we put a stomach tube down and find the swelling does not go down. We pump in a little air and we find that the air is above the dull area. We should then think of the pancreas or a filling of the lesser peritoneal cavity.

I remember a case very distinctly that was like the case mentioned by Dr. Mann. We could hardly mistake it. We had also two cases of cysts of the tail of the pancreas, which we went at extraperitoneally. Dr. Judd said sometimes he removes as much of the lining as he can. We did that too and in addition we swabbed out the balance with strong iodine, getting as much reduction of epithelium surface as possible. It is very good to close the wound tight afterward around a good sized rubber tube for drainage. Dr. Farr mentioned the rubber cement. About 20 years ago Doederlein came out with a rubber cement which he called Gaudanin and we used it. The discharge is reduced very much by a diabetes diet. I think that point is worth while.

DR. E. S. JUDD, Rochester (closing): Regarding the point Dr. Earl mentioned, drainage rather than removal: In reviewing the literature I found that emphasis was placed on removal of the cyst whenever possible. In my own cases it seemed to me that the results were just as good in those which were drained as in those in which the cyst was removed.

Dr. Ritchie brought out a point that I also mentioned, that the location of the cyst is probably the best point in the diagnosis. We have lately been able to diagnose most of the cysts. After a few of these cases have been seen they may be picked out by the feel. As Dr. Schwyzer mentioned, we were able to make a very fairly accurate diagnosis of most of the cases.

## ON ELECTROCARDIOGRAMS IN THYROTOXIC CONDITIONS

By GEORGE C. W. STEIN, M. D.  
St. Paul, Minn.

The electrocardiograms of cases of hyperthyroidism taken at the University of Minnesota in Minneapolis are usually of the so-called "arched type" in the second lead. They show an arching of each cycle, concave downward from the beginning of the T wave to the end of the P wave.

Both Hoffmann<sup>1</sup> and Strubell<sup>2</sup> have pointed out that the T wave is exaggerated in hyperthyroidism much as after muscular exertion. According to Strubell, the P wave, too, is increased in height. Hoffmann thinks that the height of the T wave increases as the distance from the beginning of the Q or R wave to the end of the T wave is diminished, this change being an expression of the rapidity of the systolic contraction.

Figure 1 shows four characteristically arched hyperthyroid records in the second lead. In Table 1 measurements from the second lead of records of sixteen pronounced and fairly uncomplicated cases of hyperthyroidism are given. The height of the P, Q, R, S, and T waves is expressed in millimeters, one millivolt corresponding to ten millimeters, the usual calibration. The length of the P-R, R-S, and S-T interval is given in seconds. The P-R interval, representing the conduction time from the sinoauricular to the auriculo-ventricular node, is measured from the beginning of the P wave to the beginning of the R wave; the R-S interval is the distance from the beginning of the R wave to the end of the R wave, or of the S wave, when this is present; the S-T interval is the distance from the end of the R-S interval to the end of the T wave. Of six cases measurements from more than one record are given.

It will be observed that the P, R, and T waves are well developed, the first two averaging rather higher than, the third about as high as, the mean normal values as given by Lewis and Gilder.<sup>3</sup> These are 1.16, 10.32, and 2.46 millimeters for the P, R, and T waves respectively. In one case only is the P-R interval as



short as .12 sec., the lower limit of normal values. The upper limit, .18 sec., is reached more frequently and sometimes exceeded.<sup>6</sup> The R-S intervals are fairly normal. The S-T interval, which measures the length of the T wave, is mostly below the normal values of .30-.40 sec.<sup>6</sup> Electrocardiographic evidence of left ventricular hypertrophy is present in four cases, of right ventricular hypertrophy, in one case.

The arching of the ventricular complex seems to be due mainly to a shortening of each cycle by the tachycardia which causes the usually well-developed and sometimes exaggerated T and P waves to encroach upon each other and partly to merge, the galvanometer string not having sufficient time fully to return to the iso-electric position between them. The frequent occurrence of pronounced Q and S Waves and of shortening of the T wave further increases the "arched" appearance.

The effect of the overriding of the P and T waves is illustrated in the first record of Case 7, (Fig. 2), in which short and long cycles occur as the frequency changes. In the short cycles the downstroke of the T wave and the upstroke of the P wave are both very short, the latter setting in very soon after the beginning of the former, cutting it short, as it were, and causing marked arching. In the long



Picture of six of the cretins: From left to right, back row, Case II and VIII; front row, Cases VII, V, VI, and I.

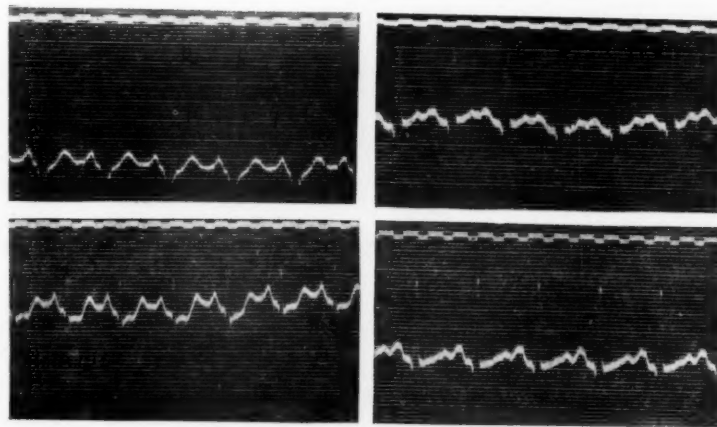


Fig. I

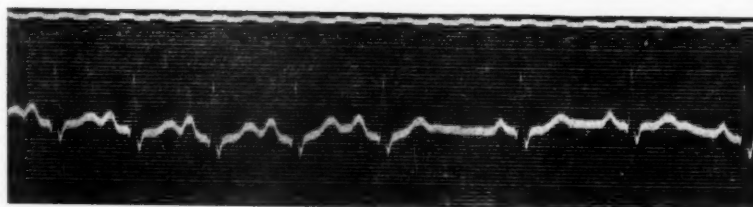


Fig. II

cycles, on the other hand, there is a long diastolic period of rest, the P. and T waves do not interfere with each other and there is, consequently, no arching. The S-T interval is about .30 sec., in the long and .23 sec., in the short cycles, while the conduction time is, oddly enough, longer in the short cycles than in the long ones. Other marks of distinction between the long and short cycles in this record are discernible in the shape of the P wave and the level of the straight line marking the diastolic period of rest. The crest of the P wave is rounded in the short, more pointed in the long, cycles. This appears to be an effect of the encroaching T wave. Furthermore, in the long cycles the diastolic period of rest is represented by a long straight horizontal line at a level with the short horizontal line directly following the P wave, both lying in the isoelectric position. In the short cycles this line disappears as the end of the T wave coincides with the beginning of the P wave. In the cycles of intermediate length the diastolic straight line is at a distinctly higher level than the line following the P wave. This phenomenon is of frequent oc-

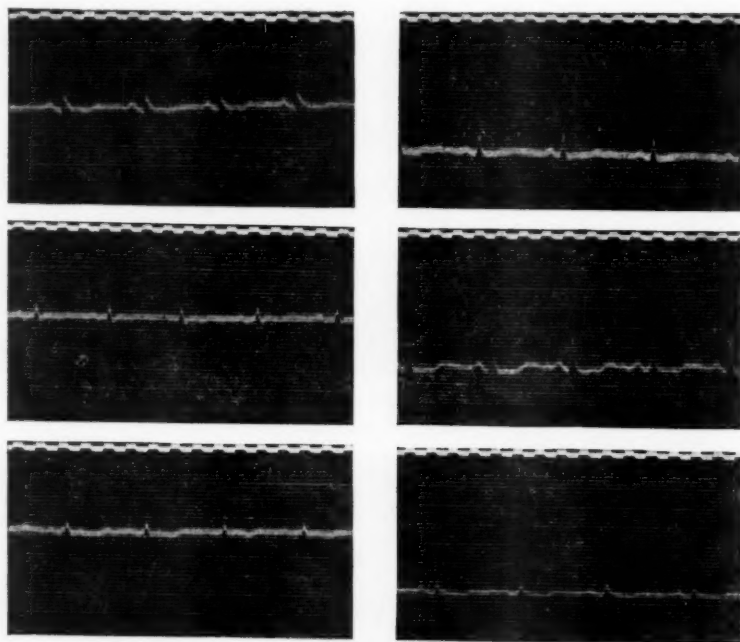
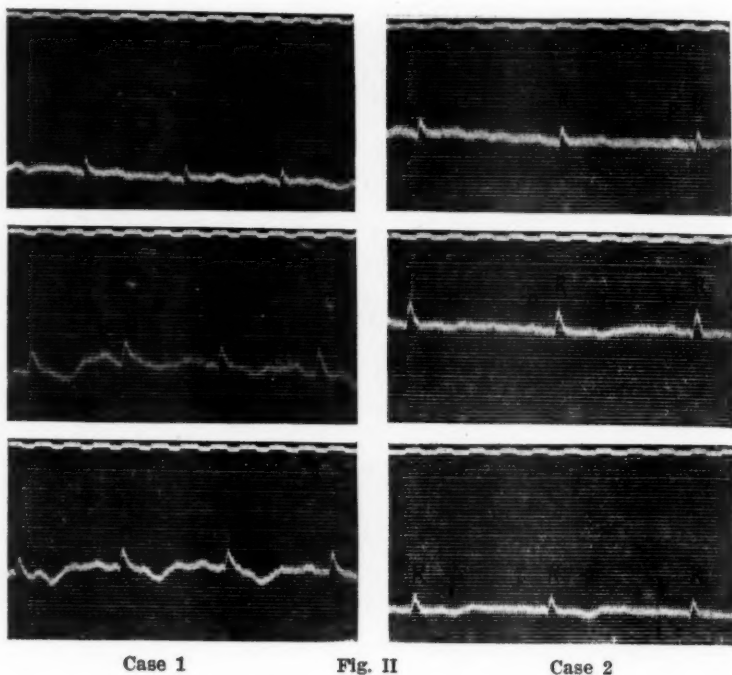


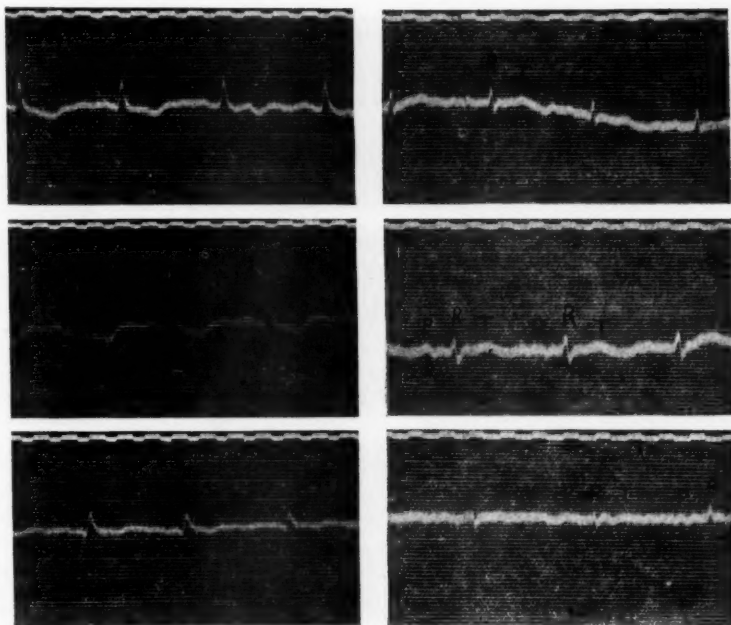
Fig. III—Case 1

eurrence in cases with rapid heart action and suggests the possibility of a constant current resulting from simultaneous auricular and ventricular activity.

Records of the arched type are sometimes met with after muscular exercise and in febrile conditions, notably tuberculosis, whenever we have a simple tachycardia<sup>1</sup> with well-developed P and T waves.<sup>7</sup> There, too, the T wave is apt to be shortened. On the other hand, records of exophthalmic goiter have been published which show none of these features.<sup>8</sup> Complicating myocardial or valvular changes may, of course, modify the picture. Nevertheless, in the absence of considerable fever the arched type suggests hyperthyroidism and is of some diagnostic value.

These observations on hyperthyroidism led me to investigate the opposite condition, hypothyroidism. Electrocardiograms of cretins have not yet, to my knowledge, been made. Zondek<sup>9</sup> studied cases of myxedema and found that they always sooner or later develop considerable cardiac dilatation, usually, however, without or with only slight symptoms of decompensation. The characteristic diagnostic feature is, according to him, the disappearance of the P and T waves in the electrocardiogram and their reappearance coincident with improvement following the exhibition of iodothyrene.

Through the kind co-operation of Superintendent G. C. Hanna and Dr. W. A. Errickson of the Minnesota School for Feeble Minded at Faribault, I had the opportunity of having eight cretins electrocardiographed. All of these subsequently underwent a prolonged treatment with thyroxin, administered by mouth, after which four of them were again



Case 2

Fig. III

Case 3

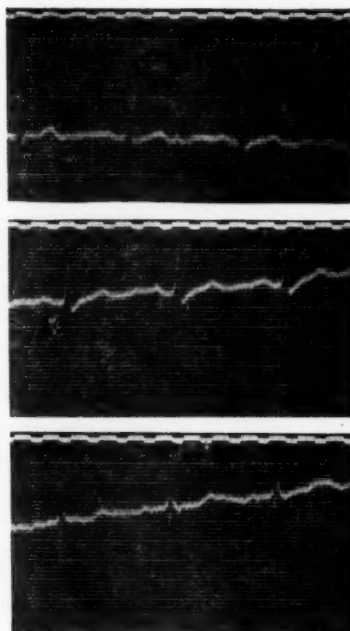


Fig. III

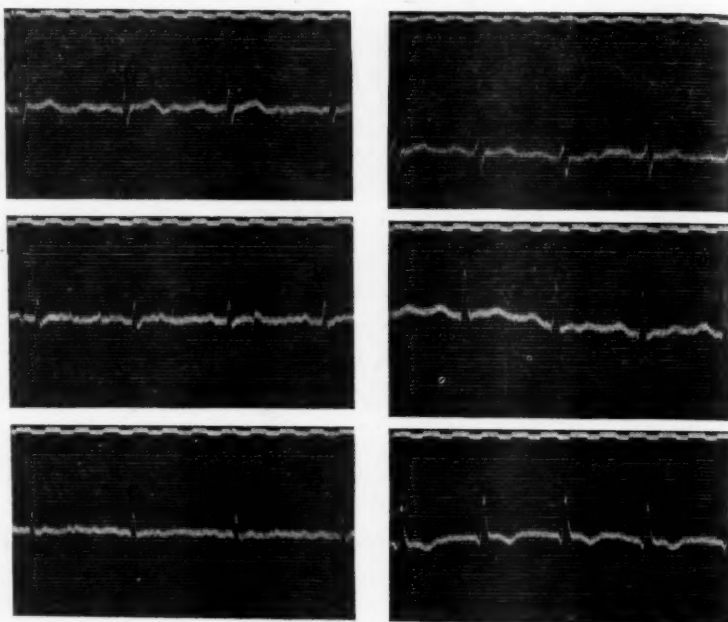
electrocardiographed. The patients' ages varied from 15 to 31 years, their mental ages as shown by tests taken by the department

of psychology from 22 to 55 months. In all of them the somatic signs of cretinism were pronounced, excessively so in Cases 1, 4, and 7. No complicating illness was revealed by the clinical examination. Two Cases, 1 and 4, showed some clinical improvement following the administration of thyroxin.

The electrocardiograms taken before the treatment are shown in Figure 3, the four taken after the treatment, in Figure 4. In Table 2, measurements from Figure 3 in table 3, measurements from Figure 4, are given. Case 1 was cardiographed twice before beginning the treatment.

The cretins show a prevalence of low values for the height of the P, R, and T waves. Inversion of the T wave occurring in Cases 1 and 2 in the second, in Case 2 also in the first lead, may perhaps be regarded as an extreme reduction of the T wave which passes so to speak through zero into negative values. The average length of the S-T interval is within the above mentioned normal limits. No other anomaly seems to be distinctive.

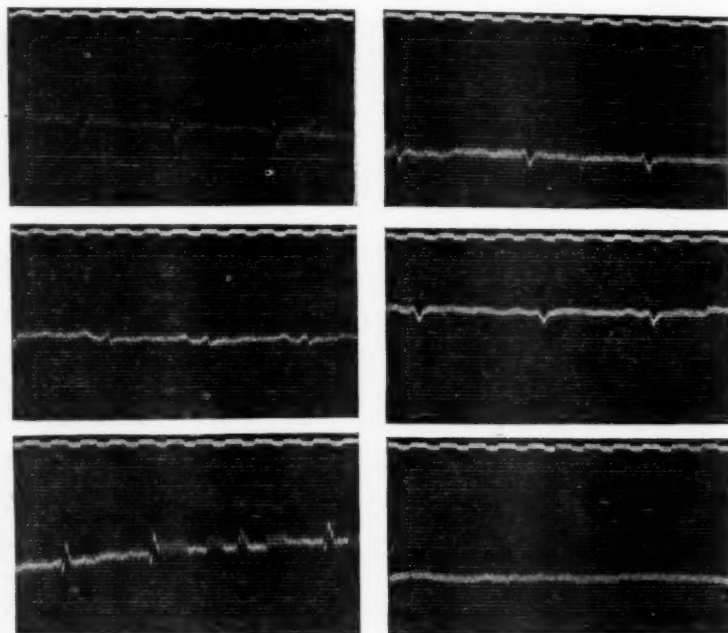
It thus appears that whereas in hyperthyroidism the auricular and ventricular complexes are generally increased in height, they are diminished in height in hypothyroidism. This



Case 4

Fig. III

Case 5



Case 6

Fig. III

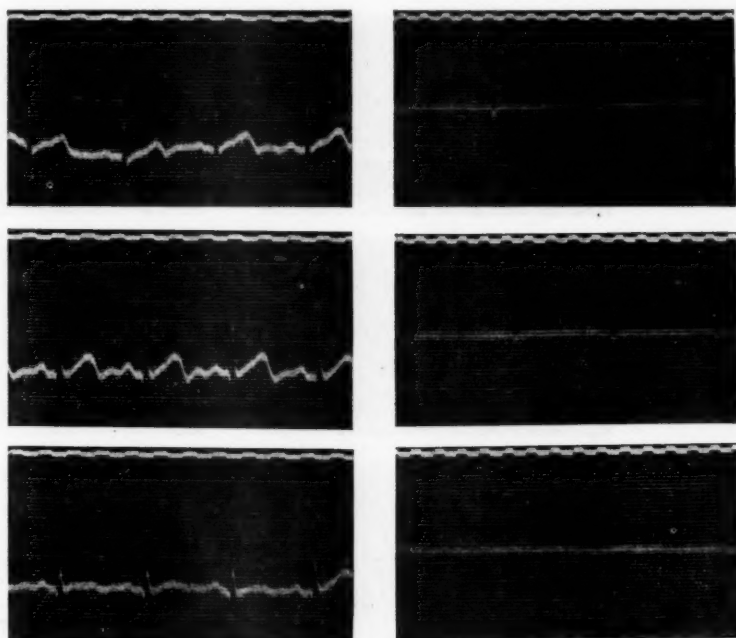
Case 7

is, indeed, what might have been expected, the two conditions usually manifesting themselves as physiological antitheses. It is, furthermore,

evident that inversion of the T wave in the second lead occurs in cases of cretinism uncomplicated by other pathologic cardiac condition." The T wave, short in hyperthyroidism, shows a normal average in the cretins examined.

The thyroxin medication did not produce uniform changes in the electrocardiograms. In Case 4 it is followed by an increase in the size of the auricular and ventricular complexes. In Cases 1, 2 and 7 the R wave is reduced in height. In Case 7 the complexes are exceedingly small and quite evanescent in the third derivation. The inversion of the T wave is less marked than it was before treatment in the second and third lead of Cases 1 and 2. It is, however, apparent now in the first lead of cases 1, where it was doubtful before."

The administration of thyroid gland occasionally causes amelioration in scleroderma, a condition sometimes attributed to a thyroid dysfunction." I, therefore, welcomed the opportunity of having two cases electrocardiographed. One of them, a young woman, patient of Dr. A. W. Hilger of St. Paul, developed a generalized scleroderma subsequently to an erysipelas of the head. About six months later she had made considerable spontaneous improvement. Her record was then taken and is shown in Figure 5. It is in no wise remarkable. The second case, also a generalized scleroderma in a young woman, was greatly benefited by intravenous injections of thyroxin. Her electrocardiograms, taken before treatment was begun and after improvement had set in, are shown in Figure 6. In the first record there is an inversion of the T wave in the second lead which, as in two of the cretins, is diminished subsequently to the exhibition of thyroxin.



Case 4

Fig. IV

Case 7

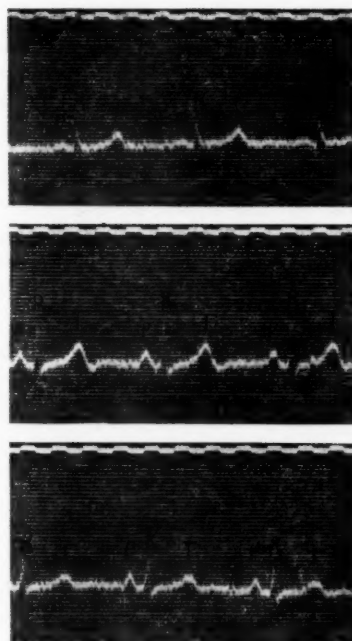


Fig. V

The conduction time is reduced from .20 to .18 sec. Auricular disturbances and occasional ventricular extrasystoles occur in both records.

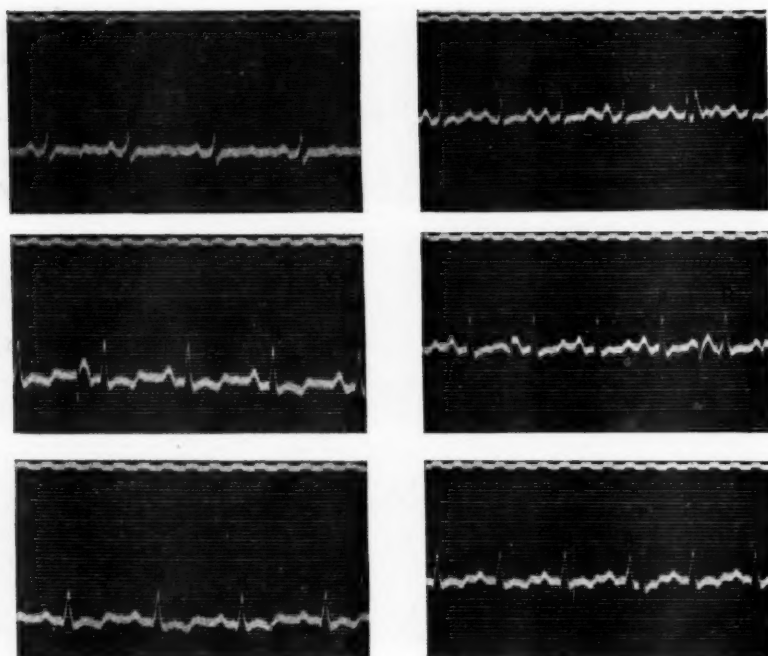


Fig. VI

The observations on which this paper is based were made in Dr. R. E. Morris' laboratory in Millard Hall. I wish to thank Dr. Morris for his invaluable aid in its preparation.

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TABLE I

Case	EC Hypertrophy	Pulse rate	P	Q	R	S	T	P-R	R-S	S-T
I	....	125	3.5	2.	19.	....	2.7	.17	.05	.27
....	....	100	2.	1.	15.	minute	2.5	.18	.07	.25
II	....	137	2.	1.	13.	....	1.	.17	.07	.20
III	let	135	1.5	....	10.	2.	3.	.17	.07	.22
IV	....	108	2.	....	15.	5.	2.5	.16	.09	.24
....	....	84	1.5	....	12.	5.	1.8	.15	.09	.28
....	....	144	2.	1.	13.	2.5	2.2	.17	.07	.18

TABLE I—(Continued)

Case	E. C. Hyper-trophy	Pulse rate	P	Q	R	S	T	P-R	R-S	S-T
V	....	132	3.3	3.	21.	3.	3.5	.12	.08	.19
VI	right	160	2.	2.5	16.	....	2.5	.16	.06	.16
....	....	128	3.	1.5	23.	....	2.5	.18	.07	.22
....	....	142	2.8	1.5	23.	....	3.7	.17	.06	.20
VII	....	120	4.	2.	14.	4.	3.	.20	.09	.23
....	....	85	2.5	1.	15.	3.5	2.8	.16	.09	.30
....	....	99	2.	minute	13.	2.	2.8	.17	.06	.29
VIII	....	106	2.5	minute	8.	1.	1.	.15	.07	.23
....	....	110	4.5	minute	23.	2.5	1.	.19	.11	.20
....	....	110	3.	....	18.	3.	1.	.20	.11	.20
IX	left	86	1.	....	4.	minute	1.3	.13	.04	.30
X	....	101	2.5	1.5	15.	4.	3.	.17	.09	.25
XI	....	134	1.	2.5	7.	1.	2.	.16	.04	.20
....	....	134	2.	2.	13.	minute	1.5	.16	.05	.22
....	....	116	1.7	2.	13.	1.	1.	.15	.05	.23
....	....	119	1.5	2.	13.	....	1.5	.19	.05	.23
....	....	117	1.5	2.	14.	2.	1.5	.19	.04	.20
....	....	123	2.	2.	14.	....	2.5	.15	.06	.20
XII	left	125	4.	1.5	8.	2.5	3.	.16	.03	.25
XIII	left	120	4.	....	13.	4.5	2.5	.16	.06	.28
XIV	....	115	3.	1.	32.	....	2.5	.15	.1	.28
XV	....	95	2.5	....	15.	2.	3.5	.17	.07	.29
XVI	....	118	4.	1.5	19.	3.	4.	.18	.08	.22

TABLE II

Case	Sex	Age	Mental age in months	E. C. Hyper-trophy	Pulse rate	P	Q	R	S	T	P-R	R-S	S-T
I	†	31	55	....	83	2.5	....	6.	....	inverted	.16	.08	.32
	†	31	55	....	65	minute	....	6.	....	inverted	.20	.07	.36
II	†	24	48	....	84	1.5	....	11.	....	inverted	.18	.08	.30
III	†	27	42	....	82	minute	....	3.	2.5	1.	.20	.05	.40
IV	†	31	22	....	89	minute	....	5.	1.5	minute	.16	.06	.35
V	†	15	32	right	101	2.5	....	11.	....	2.	.20	.06	.29
VI	†	25	32	....	86	minute	....	minute	2.	minute	.17	.09	.30
VII	†	22	54	....	75	minute	....	minute	2.5	minute	.18	.06	....
VIII	†	15	44	left	75	1.5	....	9.	1.5	1.5	.20	.07	.28

†—Male.

‡—Female.

TABLE III

Case	Pulse rate	P	Q	R	S	T	P-R	R-S	S-T
I	87	minute	----	2.	minute	inverted	.16	.05	.27
II	77	1.5	----	8.	----	inverted	.16	.07	.39
IV	103	2.	----	11.	----	5.	.16	.04	.30
VII	70	minute	----	minute	1.	----	.15	.11	----

THE ORGANIZATION OF MEDICAL  
SCHOOLS AND HOSPITAL FACILI-  
TIES FOR GRADUATE MEDICAL  
EDUCATION\*

By E. P. LYON, Ph. D., M. D.,  
Dean, University of Minnesota, Medical School,  
Minneapolis, Minn.

You will note from the original program that a paper on this subject was to have been presented by Dr. Louis B. Wilson, of Rochester, and that I was to discuss it. As he cannot be here, I have been asked to present his subject. I have no formal paper. In the few minutes allotted to me I shall discuss three topics, the first two of which pertain to graduate medical education directly. The last concerns our state university medical school, and therefore concerns graduate work indirectly.

It is evident that two types of post-degree work need to be carried on. The first of these is the type of education needed to make medical specialists in the real sense of that term. Such a course, as you all know, does not consist of three weeks or three months. It is a matter of years; nobody knows how many; but surely, three or more years under good auspices must be put in by the medical graduate before he can be a competent surgeon, or a competent internist.

The University of Minnesota has instituted a plan of instruction for medical specialists under the same organization and ideals as those which are used in the universities all over the world for the production of specialists in other fields of human endeavor. The chemist, the historian, the expert in agriculture, and so on, are all graduated under the system which I shall describe. Our idea is that medical specialists can be taught in the same way; and what we call

the Minnesota plan is merely the application of the ideals of the graduate school to medical education.

There are four or five points which are common to this type of education everywhere. There is first the machinery or organization under which it is accomplished. The graduate school is not a school of buildings and classes in the ordinary sense, as people are accustomed to think of a school. It is rather a faculty of teachers; and its organization is superposed, as we might say, on the other schools and colleges. Just as you belong to the county society, to this society, and to the state society, so there are in the university men belonging to various faculties. From these groups of university men in all the fields of learning, those who are best qualified to teach advanced work are picked out and belong also to the graduate faculty. The graduate school is therefore, not a school of buildings or laboratories, but is rather a faculty and a group of advanced students. I am not dean of that faculty; the professor of history happens to be.

Secondly, graduate education in all branches is informal. Of course, you all know real education is individual, and that a man educates himself. You are here in this meeting really for the purpose of continuing your education. So it is in the graduate school,—each man educates himself with the help of those who are expert in the line he wishes to pursue. Each man has an adviser under whom he works and who lays out a program for him. That is the way we do, both at Minneapolis and Rochester.

In the third place, a man having decided upon his main branch must prepare himself, also, along allied lines or else he is not a true specialist. He must know those facts and methods which are the foundation of his work. We have him choose his "major" and "minor" subjects. Then we have a program laid out which

\*Address given before the Southern Minnesota Medical Association, Fairmont, Minn., June, 1920.

involves the necessary foundation sciences for his specialty.

If he is going into internal medicine, he goes back to physiology; back to chemistry. If it is surgery, he takes up anatomy, pathology, and so forth. You all know when you come to think of it that in the ordinary four year medical course you got only the elements of these laboratory branches. Therefore our plan involves a more thorough knowledge of particular sciences that one needs.

It is of course essential that a man have also a thorough clinical knowledge of his specialty. We try to see to it that the specialist is well trained clinically. We feel however, that a person going into any given specialty is bound to be with that all of his life time, whereas only for a limited time will he have access to good laboratory facilities.

We feel, fourthly, that a man must be acquainted with the literature of his specialty, and hence we have requirements of language tests. We feel that a specialist should be a contributor to his specialty and should know the methods of research. Therefore the requirement of a thesis. And finally there are comprehensive examinations that will test a man and show that he is qualified for an advanced degree which is merely the sign of qualification of a specialist, from the university as a standardizing agency.

This, in brief, is exactly the way an historian is produced; that a chemist is produced; and that an expert in soils is produced. This is the Minnesota plan of graduate medical education which is in vogue in connection with our hospitals at Minneapolis, with our laboratories and with the Mayo Foundation. The latter, you understand is not a part of the medical school, but is a part of the graduate school of the university.

It is a source of great pride to us, (and I think many of the practitioners of the state share with us in this feeling), that we have the largest, strictly graduate school of medicine in the world. We have about 200 students in the two places.

You will note if you stop to think of it, that our plan is really nothing new. It is what has been done before, with one exception. The

exception is very important, and I shall try to make it clear.

Dr. Wilson as chairman of a committee on graduate medical instruction, appointed by the Council on Medical Education of the American Medical Association, investigated how men become surgeons, urologists, eye and ear men, and so forth. He found, taking the good ones, that the chief method that has been used in the past and that is in use now, is that they should serve as "assistants" in a good clinic for two, three or more years. The doctor calls his helpers "assistants"; but from the young men's standpoint, they serve their assistantship for the purpose of becoming efficient in the specialty. Now our idea is that those young men be looked upon as students and not as hired men. If you go to the Mayo Clinic or the University Hospital you will see young men working there. They will look to you like assistants, and they are assistants; but we take a different point of view regarding them. We say they are not the servants of the clinic, but primarily students. We call them "fellows." As soon as you make that slight transition in regard to your assistant, you have made a great difference in your attitude toward him and in his attitude toward his work. You lay out a man's program not with reference, primarily, to how he can best help you, nor how he can best contribute to the efficiency of the hospital or clinic, but how you can best help him. As an outsider, (because I am a physiologist and not engaged in clinical medicine), I have been surprised to see the difference in the attitude of our men, both at Rochester and at Minneapolis, as soon as they began to regard the young doctors as students primarily and ceased to regard them as assistants primarily. You would hesitate to send an assistant perhaps to the anatomical or pathological laboratory for three or six months and pay his salary; but we do not have any hesitancy in sending these men, if that is what they need.

As I have tried to analyze the situation in my mind, I have become more and more persuaded that the essential point in the Minnesota plan is the taking of the assistantship and making it a graduate studentship, and considering the obligations of the institution toward these men along that line. You can see how this may

affect the organization of hospitals and may be extended to hospitals not immediately connected with medical schools.

I hope I have conveyed to you clearly what our main idea is in the graduate medical school of the University of Minnesota. As I have said, it is exactly the same idea applied in regard to medicine that for years has been applied successfully to the natural sciences and social sciences, and to languages and literature. That is the first topic I had in view.

A second thing I want to speak of is the type of education, which is apparently needed by ordinary practitioners in the form of review courses or short advanced courses by which in the short time which they can spare from practice they can gain information and make themselves more proficient along some line or master some new technic. That is what so-called post graduate schools attempt to do. Dr. Wilson if he were here could give you definite information on this subject, as he has visited these schools all over the country. But that, in the main, is what they attempt to do. None of them, I believe, has mapped out anything like a complete course to fit men for a specialty, although they may give a part of it.

This second type of education is a difficult thing to organize, and I do not think it has been done satisfactorily in this country. If you attempt to do it in a medical school of the undergraduate type you meet with great difficulty. At Minneapolis, for example, we have a faculty and certain clinical facilities; and both are occupied in taking care of a large body of undergraduate students in a definitely laid out four year course. To separate certain parts of this instruction and organize short intensive courses, such as are needed by practitioners who can only spend three or four weeks in study, would upset the whole curriculum. We have not been able to do it. Our faculty is too small and our facilities are too limited. Although I recognize the need, I do not see how it can be met,—I mean adequately, from an educational standpoint.

In my opinion, what is needed for practitioners is a large, independent endowment and a special faculty in connection with ample facilities in large hospitals which are not used for undergraduate instruction.

If you want to go and get a definite course in clinical pathology or cystoscopy or some other branch four or six weeks, somebody must be paid to give it. The fees you can pay are insufficient; just as the tuition you paid as undergraduates was insufficient to supply good instructors. State aid or endowment was needed.

You do not wish moreover to sit on a bench and hear lectures. You want to do the actual work under strict supervision. Certain men will have to give a large amount of their time to this form of teaching, and it does not appear that the thing will be done right until we have special organizations for it is in connection with clinical facilities not used for undergraduate teaching in the large cities.

While therefore we cannot organize post-graduate work at Minnesota, as some of you knew it in Berlin and Vienna, we will do all we can for you; and perhaps there is more up at Minneapolis than you know. All of our lectures, clinics, dispensary work, laboratory courses, and so on, are freely open to any practitioner who wants to come there for a few days or weeks as a visitor. If he wants to stay a longer time he can do so as a special student. There are special laboratories of animal surgery and experimental medicine, and we have full time men in charge of them. The same is true of the anatomical, bacteriological, pathological and physiological laboratories. They are well equipped, and we have good men in charge. You will find they will give you any assistance in their power.

The "Physicians' Days" of special clinics which were discontinued on account of the war may not be resumed, because the Minneapolis members of our faculty will cooperate in the "Clinic Week" of Hennepin County, which places all the clinical facilities of Minneapolis at the disposal of visiting doctors. Our university clinicians in St. Paul likewise will take part in the "Clinic Week" of that city. However, I want you to know we have your needs in mind; and as far as we can, consistently with our obligation to our undergraduate body, we will use our facilities and our institutional forces to meet the needs of the medical profession.

You have here today a body of influential medical men of the state; and I want thirdly,

to say a word to you about the medical school of the state university. I venture to say that you all believe that the medical school ought to be ample for the needs of the state as an undergraduate institution; and I presume most of you take the position that it should be ample for the needs of the state as a graduate institution as well. Most of you would go a step farther, on account of its strategic situation geographically (with no school between Minneapolis and the western coast), and say that our school ought to be ample for the needs of the great northwest. The question is, can it meet these needs?

It is a good school. We have no need to be ashamed of it. I am going to give you some information which I got in a round about way from the dean of another school. He wrote letters to about twenty-five of the leading medical educators, asking them to give their opinion as to the twelve leading schools of the country. The last time I saw him he had received 18 replies, and Minnesota was on every list except one. Therefore you see a large number of men who are posted on medical education believe we have a good school in this state.

But that ought not to make us self-satisfied and complaisant. We all see there are ways in which the school can be improved. Every department should be strengthened, but the place where we are the weakest is on the hospital side. Ever since I have been here, now seven years, we have been working and working, and not a single thing has been added to the hospital in that time except a service building, which was constructed soon after I came. We need 500 or 600 beds instead of 200. I think you will all agree with that proposition abstractly. It is in regard to how to get them and how to run them that questions arise.

We have a great many problems; but I will touch on only one of them, that of clinical personnel. If we wanted an anatomist tomorrow, everybody here would say, go and get the best man that can be found anywhere in the world and have him give his whole efforts to teaching that subject. You would not wish to have him practice medicine one-half or three-quarters or ninety per cent of his time. You would say, pay him sufficient salary so that he may devote his whole time to anatomy. It is the same with

regard to pathology, pharmacology, physiology and bacteriology.

When we come to the clinical departments we meet with great difficulty and difference of opinion; that is, how to select men, what type to get, what arrangements can be made with them. I do not know where we are going to arrive; but I am frank to say to you that this problem is the hardest one in medical education to solve, and I bespeak your thoughtful, careful, friendly consideration of it.

Shall the teacher of surgery, medicine, or obstetrics devote his whole time to research and teaching, and not practice at all? Some people advocate this. There are two reasons why our university cannot do it. First, we have not adequate hospital facilities to attract such men, and the second is we cannot command salaries large enough.

But I for one do not believe in that plan. I think our clinical teachers ought to have an intimate relation with medical practice in some form or other. But how?

In the old days medical colleges picked out a local practitioner, who was best known in his line, who had the best reputation or biggest practice and made him professor of medicine or professor of surgery. But it was found there were distinct limitations in educational efficiency connected with this method.

When a man even with the best intentions devotes part of his time to teaching and the other part to practicing medicine, there must be occasions in which he must put the work of attending to his patients first, because he has assumed a vital responsibility toward them. Moreover the natural tendency always is to take more practice as it comes, and this seriously hampers a teacher's work in connection with the university. Some men, furthermore, are not entirely conscientious in regard to their school obligations. Finally the busy practitioner is seldom an investigator of authority; nor as a rule can a man who has gained fame in medical research retain his standing in that regard if he begins on an active outside practice.

In spite of all these drawbacks, I advocate some kind of arrangement by which the clinical professor may maintain relationship with the medical profession,—an arrangement which shall make him really part of the profession.

It must be an arrangement which makes the educational side truly **vocational**, and which makes practice merely secondary or avocational rather than the man's primary work. For instance, a man in Dr. Rowntree's place as chief of the department of medicine, ought to be primarily a teacher and investigator. His relation to the outside ought to be secondary.

Let me repeat, medical education in the clinical departments is between the devil and the deep sea. On the one side is the part-time instructor who is primarily a practitioner and only secondarily a teacher. On the other side is the cloistered scientist with no knowledge of practice and no common bond with the medical profession. We should, *we must indeed*, avoid both these extremes.

The plan which I believe is the best is what I have called the geographical full-time plan. A man in medicine or in surgery or in any of the main clinical departments in a university should do all of his work *in one place* and under one organization and one administration. That again may strike some of you as being impossible of accomplishment because it involves so many things which you think a state school should not do. I hope to show you that such is not the case.

If our teachers do all of their work in one place, it means the university hospital has got to have three classes of patients; firstly, those who do not pay at all; secondly, patients who pay for their bed and board, the so-called per diem patients; and thirdly, we must have those who pay for their professional care also.

You are all doubtless willing that the medical school should care for the pauper sick of the state. You would like to see the university charity hospital enlarged, but there we strike the legislature. They are not willing to go any further in the matter of a free hospital. Moreover, the Board of Regents are not willing to use university funds to any greater extent for the support of free beds.

Many of you would probably be willing that we take the second class or per diem patients. You hesitate in regard to pay patients. That is where our conference with a group of Twin City doctors came to the point of opposition. They were perfectly willing that the university hospital should have free patients; and every one, except perhaps one or two, said he was willing that

the university should take a class of patients paying for their bed and board. They were willing finally that our professors should have a hospital across the street for private patients, but they were not willing to have pay patients on the campus of the university.

We ought to work out this problem together; and I want to point out, from my standpoint as a physiologist, that I should very much dislike to have one laboratory on the campus, another across the street and another perhaps over town. With such an arrangement I could not do my work satisfactorily. Geographical unity is very essential to my department of physiology, and I believe it is equally essential to the department of medicine, or to the department of surgery.

There are excellent reasons from the educational side why we should have all types of patients. From the financial side it is indispensable, as in no other way can we support the best type of clinical teachers. In no other way can we make them university men in the fullest sense and at the same time active members of the medical profession.

We will best conserve the medical school and best conserve you as a profession if you can bring yourselves to the point where you are willing to assent to the principle of geographical full time and not be upset by its minor implications.

Under this plan, all patients would be under the university roof and under one organization. All fees and charges would go to the hospital. There would be better opportunity and facilities for interns and nurses and graduate students and for the active profession. It is the plan in use in Michigan and just adopted in Wisconsin, and nearly like that used in Iowa.

Competition under this plan would surely be less than if the clinical teachers with university prestige have offices in town and the right to consult all over the state. The only argument you have to fall back on is that of public policy. Are you ready to say that the university should have no relation to the practical affairs of life? That it should go back to the cloistered seclusion of the middle ages? I cannot believe that the intelligent medical profession of Minnesota is willing to take such a position.

I believe that the geographical full-time plan is the solution of the university medical problem.

I bespeak your careful study of it, and trust and believe that you will give your assent to it when the time shall come.

#### DISCUSSION

DR. WILLIAM F. BRAASCH, Rochester: After listening to the clear cut frank discussion of the subject of graduate and undergraduate medical education in the University of Minnesota and after hearing his plea for the united support of the medical school by the physicians of the state I wish to apologize for my presence.

I am, however, going to read a few excerpts from a paper which Dr. Wilson wrote concerning graduate education at the Mayo foundation. In this paper Dr. Wilson has described the general plan of medical education that is followed at Rochester. He, together with Dean Lyon and others of the University of Minnesota deserve great credit for its development. Being a member of the committee of the graduate school, this question is frequently asked me by physicians: "What form of medical education do you give at Rochester and who are available for this education?" In answer to this the following data may be of some value.

In regard to the divisions of the men who are taking the various courses at Rochester, we have now a total of 142 fellows there. The largest number, 86 are majoring in surgery, 22 in medicine, and we are rapidly increasing the number of men who are majoring in medicine; nose and throat, 12; urology, 5; dental surgery, 4; orthopedic surgery, 3; laryngology, 3; dermatology, 4; pathology, chemistry, bacteriology, one each, or a total of 142 fellows enrolled at Rochester.

It may be of interest for you to know where these men came from. Of the number 22 came from the University of Pennsylvania; 18 from the University of Minnesota; Rush Medical College, 14; Michigan, 8; John Hopkins, Maryland, Toronto, Harvard, Vanderbilt, Iowa, five each; Washington University, Creighton, and the London Medical College of Canada, 3 each, and the rest, namely, Georgia, Washington, Syracuse, Western Reserve, Jefferson—in fact practically all of the Class A medical colleges are represented together with several foreign universities, so that the number taking the various courses is widely scattered throughout the United States and Canada.

We are pleased to note that we have the second largest group from the University of Minnesota, and while we encourage applicants from the University of Minnesota, nevertheless only a small proportion are selected from that school.

It is easy to see what this will lead to, when one considers that forty of fifty men who have taken

these courses will graduate every year. These men will unquestionably be better equipped and fitted in every way to practice a specialty than the average practitioner without such preparation. In the course of years, one can readily see what a powerful influence for good these men will have upon the medical profession throughout the United States and in this way we hope that the Mayo foundation will justify its existence.

DR. WALTER H. VALENTINE, Tracy: I graduated from the University of Minnesota twenty years ago. I am in favor of postgraduate medicine, and I am also in favor of special training for those who wish to become specialists, but I do not think a six weeks course in attending operations will make a specialist. I feel that the general practitioner has been overlooked by the University of Minnesota, because they have the facilities there for teaching things we do not know. A great many of us graduated at a time when clinical facilities amounted to absolutely nothing. I saw one obstetrical case before I received my diploma, and I think my experience is no different from that of other men who have graduated from there.

I do not wish to criticize, but I would simply state that when we practitioners send a patient to the university hospital we are asked to give a tentative diagnosis. When that patient is taken care of, the man who sent him there knows nothing as to whether the diagnosis was made correctly or not. He knows nothing of the treatment given the patient, and the patient is sent home sometimes wondering whether the local physician knew what was the matter with him. We should be informed as to the exact findings, and if we are correct in our diagnosis it should be verified. If we are incorrect in our diagnosis, we should be jacked up and told how to make a diagnosis.

While Dr. Rowntree very kindly told me sometime ago that he would be glad to aid any of us in any special work we desired, I do not believe there is a man here who has ever heard that publicly announced on the platform until today.

We have no records of what the university hospital is doing; they are not given to the general practitioner the way they should be. The least the University of Minnesota can do for the country doctor or the general practitioner is to issue a regular bulletin of what is being done, what is being investigated, and what is up to date, and put this bulletin into the hands of every practitioner in the state.

I feel the medical profession of the state of Minnesota is very greatly indebted to the Hennepin County Medical Society for the clinic they give each spring which is really the duty of the state university. (Applause.)



## TREATMENT OF EARLY PULMONARY TUBERCULOSIS\*

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At the outset let us recall that infection in tuberculosis usually takes place long before clinical disease manifests itself, that the large percentage of small healed tuberculous lesions found by the pathologists post mortem in individuals past middle life teaches us not only the almost universal existence of tuberculous disease in the tissues of the body, but also gives us a reasonable basis for hopefulness in beginning treatment of the clinical condition; that the substances described as antibodies to whose presence it is assumed is due the specific response in tuberculosis are considered to be cellular, and although the fact is not demonstrable it is probable that many if not all the tissues in the body are altered by tuberculous infection by the manufacture of these anti-bodies. Undoubtedly the post-mortem findings in a considerable percentage of cases are never associated with clinical disease, or at least a condition which has come to the attention of the physician, the natural resisting forces of the body having overcome the infection and healed the lesion. This thought may lead us to consider lightly the early clinical manifestation of disease, trusting to Nature unaided by physician or patient to overcome the products of infection. If this is our attitude we are playing with fire, for we cannot know although we may make a reasonable estimate, just how great are the products of infection in the body—we cannot know just how great is the natural resisting power of the individual. There is an increased metabolic change, the body cells are more or less poisoned by toxins, a greater demand than normal is being made for tissue repair. The natural forces of the body must be conserved, this resisting power must be built up, a store of energy must be supplied not only to provide for the usual needs of the body but to combat the products of infection. Healing is a slow pathological change and requires months for completion. Usually

all symptoms will disappear before the healing process begins.

Pulmonary tuberculosis should not be accepted as the final and complete diagnosis to the exclusion of all others. In many patients other diseased conditions may be present, although not sufficiently marked to attract notice at the outset. Correction of these coexisting diseased states will clear up the condition; for instance, the removal of diseased tonsils, the cleaning out of obstructed nostrils, attention to the teeth, the correction of pelvic disorders, the removal of old offending appendix, special attention given to gastro-intestinal disturbances which may be of reflex origin or be due to pathological change, as well as simply functional traceable to the toxins of the tuberculous disease. Mohler and Funk<sup>1</sup> conclude from a series of studies on early cases that "tuberculosis causes a definite downward progression in the motility and secretory function of the stomach from the very beginning of the tuberculous disease." All of which leads us to conclude that we are dealing not with the focus of disease in the lung but with the individual who happens to have the diseased lung, that we should start out in the treatment with great hope of success, with an appreciation of the seriousness of the undertaking and the necessity of continuing the treatment over a long period of time.

Now, I have nothing new to present to you today. In the few minutes allowed me I shall review the well-known line of treatment and shall take up the subject under the following headings:

1st. *Medical Supervision and an Intelligent Cooperation on the Part of the Patient.* We have learned by experience the lack of wisdom in the advice frequently given years ago simply "to go out west on a ranch and rough it" or "to go up in the north woods and live in the open." To be sure many a tuberculous man has regained his health while doing these things, but he has not done so because of sound advice. Continuous medical supervision is essential. How intimate the relationship between the physician and patient will be, how often the patient should consult his physician is to be determined by the individual needs and conditions; but the patient should not be trusted to be guided alone by his own feelings. He must have a controlling

\*Read before the Minnesota State Medical Association, St. Paul, October, 1920.

authority outside of his own will and should cheerfully place himself under orders. At the outset we cannot expect to secure intelligent co-operation if we attempt to conceal the diagnosis. Now and then it is best to allow the patient to learn the truth gradually. Often he already suspects he is tuberculous. Usually I believe he appreciates our interest in him and our frankness when we look him straight in the eye and say "You have tuberculosis, the early beginning of the curable disease, and now let us plan together the course of treatment to get well." He who temporizes from month to month with no intelligent idea of the seriousness of the problem is very apt to do badly. Vital questions arise in every instance which require wise consideration, such as "How long before I will be able to go back to my business?"—"Will I be able to return to school in the fall?"—"Do you think I should get married next June?" The housewife who is told suddenly that she must lay aside her accustomed duties in the home usually finds the readjustment difficult. Various social and financial rearrangements are necessary. If we can succeed in exposing fully and frankly the needs of the case and can secure a cheerful enthusiastic response from the patient and his family, we may consider the start is made most auspiciously on the long road to recovery. We often hear it said that the patient cures himself, that we can simply offer advice and it is for him to follow it or reject it. It seems to me this attitude is not fair to the tuberculous individual who is making the fight to get well. We know, alas! that many a patient falls by the wayside for one reason or another, and it is undoubtedly true as Pottenger has said "if he expects to be entertained and find the cure of tuberculosis wholly pleasant his chances of cure are decidedly few;" but let us not forget that he has to travel a long monotonous road often coming upon rough places. Our constant interest in his progress, our firm but friendly reprimand when necessary, our persistent helpfulness help him over the obstacles and strengthen his confidence in the wisdom of our advice.

2d. *Open Air*. It is only within a comparatively short time (about a third of a century) that open air has been extensively employed in the treatment of tuberculosis. Patients have

noted the good effects of open air until they have come to consider it the only essential in treatment and call it the "cure" for tuberculosis. While we recognize it as of prime importance and to be insisted upon continuously, we know it is to be considered only in connection with the other elements of treatment. Open air combined with rest or when indicated with exercise may have a surprisingly beneficial effect upon the various symptoms. I recall hearing Trudeau say many years ago that he knew of no better appetizer than rest in bed out-of-doors. Patients who lie in bed in the open lose their restlessness and regain sleep, fever subsides, the cough decreases. It is not always easy to regulate the outdoor living. Happily prejudices which formerly were troublesome, for example, the fear of night air and of damp and foggy weather, have disappeared for the most part with the growing popular belief in fresh air. The patient under treatment very soon acknowledges the improvement in symptoms and well being, and becomes committed to the open air regime. In this climate during the winter months, various modifications of a rigorous outdoor living are necessary to adapt it to the comforts and needs of the individual patient. Attention is paid to the proper clothing of the body and of the feet, to the arrangements for comfortable sleeping and the wrapping up while sitting out-of-doors. We are dealing not only with human individuals whose physical comfort and happiness is of importance, but with a diseased state the improvement of which will vary with the body's reaction to outdoor living. Much discomfort has resulted from a too strenuous adherence to the sleeping out regime in very cold weather. A well ventilated room with windows open provides all the air a patient can use.

I wish to say a word here regarding climate. It has been truly said "While no climate is specific, all climates are useful." Patients frequently respond well to change of climate, often regardless of the nature of the change. The effect is quite as much psychic as physiological. Contrary to the opinion sometimes expressed, high altitude is not essential in these cases. The two factors which mark our climate in Minnesota, namely a low altitude and a long cold winter, may require special consideration with some patients. At this present season of the year

shall we send our patients to the warmer climates? As we are dealing with the early case manifesting no serious complications, for the vast majority of them the answer to this question is "no." Men and women past middle life, and the very young, may find living out-of-doors less difficult in climates where the out-of-doors is more enticing to them. Experiences in practically all the states of the union, in and near the cities as well as in remote country places, bear testimony to the fact that the results depend not upon where the patient takes the treatment but upon how he takes it, and I believe the fact has been well established that the early cases as a rule do best in a rigorous climate.

3d. *Rest and Exercise.* *The importance of rest cannot be emphasized too strongly.* In the beginning of treatment it should be prescribed for all patients, although there may be but very little evidence of a toxic condition. The average patient at the beginning of treatment has no conception of what we mean by complete relaxation and rest. Reading, talking, all forms of fancy work, are not allowed in our definition. Deep breathing in the active stage is harmful. Worry, anxiety, discontent, interfere very seriously. It is impossible to lay down any rule for rest or exercise in all cases. Patients who are put to bed having only slight rise in temperature and pulse rate, malaise not marked, and other symptoms in slight degree, are allowed to go to the toilet and to sit up for meals. As the tired feeling disappears, the temperature remains normal, and the other symptoms improve, he may rest part of the day in the reclining chair. To lie in bed all day long day after day, when one does not feel very ill requires great confidence in the wisdom of our advice. Here our optimism and enthusiasm as well as cheerful surroundings may have a wonderfully beneficial effect. Our chief and first concern is to impress upon the patient that rest and exercise are prescriptions and are to be taken only in the doses ordered.

The heart should be seriously considered in these early cases as all through the course of the disease it is this organ which bears the brunt of the fight, and during the early stage it may be neglected with disastrous results later. Rest has a beneficial effect upon a heart that is showing irritability from the toxic influence of the dis-

ease. Symptoms such as cough, dyspnea, loss in weight, failing appetite, respond well to rest. Hemoptysis requires complete rest continued until all signs of blood spitting cease and the effects of the hemorrhage have disappeared. In general as I have said, we cannot lay down rules, but I am confident we all err in not prescribing sufficiently long periods of rest. If we are in doubt let us prescribe rest as it can do no harm and exercise may be very harmful. The testimony of many experienced observers bears out Pratt's conclusions made on a review of his work of ten years during which time he tried graduated exercise and later insisted upon more prolonged periods of rest. He says "a comparison of the results obtained by the two methods of treatment shows that the strict rest treatment yields the best results." After the prolonged period of rest, when we begin to prescribe exercise, let us not forget that over-exertion lowers vitality and allows an increase in bacillary products. Exercise is to be dosed out cautiously beginning with getting up and going to meals, then a short walk of fifteen to thirty minutes in the mid-morning. Later a mid-afternoon walk is prescribed, and gradually these daily periods of exercise are increased in length. In all cases after exercise is begun, rest periods are continued before and after meals aggregating from three to five hours daily. As the periods of exercise increase, the periods of rest are shortened, and we carry the patient thus gradually and slowly up to a full day of activity, keeping him under constant supervision and noting the effect upon temperature, heart's action, cough and sputum, appetite and weight, and his sense of well-being. It is extremely difficult to be sure that the patient is not overdoing. When the time comes for his return to an occupation it is wise to allow him to test himself at work on part time only, preferably in the mornings, warning him to *keep always within the full measure of his strength* and that his disease has a tendency to relapse if he does not take care of himself.

4th. *Food.* There is no specific diet for the tuberculous. As a high state of nutrition is desired, due consideration is given to the planning of a well-balanced general dietary, correcting errors in diet based on the patient's desire for the less nutritious and less easily digested arti-

cles of food. Formerly we employed forced feeding, three heavy meals a day and in addition raw eggs and milk in large quantities; but the evil effects of this practice were found to be pronounced on the gastro-intestinal tract. On a well balanced nutritious diet we may expect the patient to make slow gradual gain back to his normal in weight. This symptom is carefully watched, the patient is weighed weekly and attention is given any disturbance of the gastro-intestinal functions. In the beginning of treatment supplementing the three regular meals by lunches of milk or of egg-nog is frequently beneficial but should be practiced cautiously. When a slight disturbance of digestive function is noted, the patient may do surprisingly well on a diet largely of milk and can take from 2,500 to 3000 calories of food in this form. Frequently after a short period of liquid diet he is able to go back on the general dietary with no recurrence of digestive disturbance.

5th. *Hydrotherapy, Psychotherapy, Drugs.* Any outline of treatment for this disease is not complete without some reference to the effects of hydrotherapy; to the importance of psychotherapy, which undoubtedly may have a desirable effect upon the physiological processes; and to the employment of various drugs. Time will not allow a full presentation under this heading. Water properly used is a tonic measure. The cold sponge, the spray and the cleansing bath should be carefully suited to each individual. By means of the bath we aid in keeping the functions of the skin as active as possible and the efficiency of bodily activity is increased.

Creosote probably has no specific action on the tuberculous process. With regard to the effects of arsenic observers are not agreed. Landerer claims that it causes a gathering of leucocytes about the tubercle and that this leucocytosis is an important factor in healing. Iodine probably has no place in the treatment of these early cases, although it may be used to advantage in the later fibroid condition. Iron, hypophosphites, cod liver oil, may be employed, but as a rule these early cases do not require them.

6th. *Tuberculin.* This agent properly given to the right patient by one who has experience in administering it seems to be beneficial in a certain percentage of cases. It is difficult to draw any accurate conclusion as to the real value

of tuberculin employed therapeutically, but we have no better authority than Trudeau who said thirteen years ago "My belief in tuberculin immunization as favorably influencing the course of chronic tuberculosis rests on no more stable foundation than a strong clinical impression gained many years ago, an impression which has gradually become a conviction through years of observation. We have much to learn about tuberculin treatment, but even in the present state of our knowledge I am inclined to think that the production of tuberculin immunity by the mild clinical method is capable of favorably influencing the course of chronic tuberculosis, of prolonging life, and in many cases of shorting a commencing infection or extinguishing the smoldering fires of a chronic infection." Tuberculin has been used by many men with varying degree of enthusiasm. I have used it in selected cases for several years and still use it, believing that if properly given it is always harmless and with some patients proves to be beneficial. A specialist at Saranac of many years experience whose opinion is universally respected has written me within the past week in reply to my inquiry regarding his present attitude on this subject: "I must say I advise tuberculin today as much as ever and I believe it is a valuable thing. I think tuberculin is just as valuable today as it was twenty years ago, probably more so because more discrimination can be used today in selecting the patients with lesions which are inactive or at least not apparently progressing and giving them a stimulus which makes them heal." With the early cases under discussion today, after the activity of the disease subsides and they are on exercise, I believe the therapeutic use of tuberculin not employed indiscriminately but in selected cases and properly given offers an additional means in connection with the "hygienic-dietetic" treatment of bringing about a permanent arrest of the disease.

7th. *Treatment in Childhood.* This brief outline of the treatment applies equally well to children as to adults, except with the child, a longer period of watchfulness is necessary after apparent recovery. As he grows through adolescence to young manhood his normal well-being should be maintained, and if we can impress upon the parent the necessity of frequent per-

iodic examinations we have accomplished much toward the prevention of recurring disease. Some of us will be directly associated with school authorities and may be able to influence for better health conditions in the schools. As we treat these early cases, especially in childhood, we are vitally interested also in the prevention of recurrences and in the spread of infection in the home. The physician, as Calmette and Guinard have well said, "with a clear vision of the sociological role he is to fill will understand that his essential function is to direct the tuberculosis prevention in the family. He will bring to the accomplishment of this educational mission all the determination, all the devotion, all the energy of which he is capable."

8th. *The Advantage of the Sanatorium.* The sanatorium is the place *par excellence* where the treatment should be taken. It can be done and is being done successfully in the home. The private apartment with sleeping porch, the tent in the back yard, the shelter on the roof, or some other improvised means, may provide the patient with proper surroundings. But in the majority of cases, these cannot be a substitute for the well organized sanatorium especially built and equipped for the treatment of tuberculosis. If all patients could have a course of treatment in a sanatorium for a long enough time to become accustomed to the routine, continuing after discharge from the institution under home supervision, better results would undoubtedly be obtained than by home treatment alone. There is a crying need for more sanatoriums for these patients. The enthusiastic support of the sanatorium treatment by the physicians of any community will do more than any other one thing to popularize the movement in that community and to increase the sanatorium facilities.

9th. *Results.* It has been said that four out of five of these early cases get well. This percentage may be somewhat too high. Statistical studies are usually based not only upon immediate results but also upon ultimate results. The percentage of "apparently arrested" cases who go on to a modified "arrest" and later "cure" will naturally depend upon the social status of the individual and the necessity of his earning a livelihood. At the Adirondack Cottage Sanatorium a recent report shows that sixty-one per cent of the patients discharged during a period

of one to ten years were well and working at the time of the report. Other institutions publish similar figures. If there is any measure more than another which will bring about better end results, it is I believe, a longer period of treatment in the sanatorium and a close supervision of the patient after discharge from the institution.

In this brief review of the treatment I have attempted to emphasize the importance of medical supervision." The more optimistic and enthusiastic the physician who treats chronic diseases the better the results." If we fail to do our part it is because we lose interest, our store of optimism and enthusiasm becomes exhausted. I have found much cheer recently in the reading of Cevey's book entitled "*Peut-On Guérir Les Tuberculeux.*" His buoyant optimism has carried him over many a rough place during the years of practice with this disease and his philosophy is well expressed in his words "*Quellequ soit la difficulté de la tâche il ne tient qu'à nous d'en venir à bout,*"—"whatever may be the difficulty of the task we must continue to the end."

In the treatment of tuberculosis we come into intimate relation with the various human problems of the individual. We cannot but have the greatest respect for the man or woman who has travelled cheerfully along the road to ultimate recovery. To guide these people along the way, to aid them in learning the lessons which will help them after recovery to reorder their lives at home and at work that they may keep well, is, indeed, a privilege.

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## EDITORIAL

### COMPULSORY STATE HEALTH INSURANCE

The misfortune of sickness is often a calamity not only because of the physical suffering entailed, but because of the enormous expense incurred in our present day complex mode of living. The average American experiences from sickness a serious financial set-back from loss of wages, hospital charges, physicians and nurses fees, and cost of medicine. Why not let the state assume this already present risk, either in whole or in part?

At first thought the first impression produced is most favorable, as is often the case regarding socialism. Why not extend the system and let the state insure against other equally as serious hazards such as accidents, old age, unemployment, and even death?

The question of health insurance so-called, for it is as a matter of fact a sickness insurance, is fundamentally a governmental question. It is a question that involves the foundation of our present social and political fabric and should be settled by our ablest statesmen. It is not a question for physicians to decide and it should not be decided by the unthinking public nor by mere politicians. In our representative form of government the question will

actually be decided by our elected representatives and the will of the majority of the people will be exerted through the ballot box. In this question the medical profession is interested, and some admirable views on this subject have been expressed locally by members of the profession.\*

The question is, whether we want to change the whole fabric of our American form of government from the individualistic to the paternalistic. The paternalistic form of government may exist in either a monarchy or a democracy. As an example of the former we have had Germany; of the latter Great Britain has shown decided tendencies, particularly in the caring for the health of her citizens. The ancient empire of Rome is pointed out as a warning.

Each year various health bills are introduced in the state legislatures. The most notable one was the Health Centers Bill introduced by radical labor elements in New York State last year and defeated. The Illinois legislature is to consider a similar bill this year. If such bills were passed in each state it is estimated that a sum of money amounting to from one half to one billion dollars would be thrown into the hands of the government for yearly disposition.

Such a change would affect the public very markedly. The recklessness of youth would be encouraged as the value of health would be lowered. Malingering would be encouraged and if benefits were not to be paid under seven days of sickness, many minor illnesses would show a crises on the seventh day. The public would receive poorer medical treatment on the whole.

A large percentage of the medical profession would be placed in the employ of the government. While the average physician would have fewer bad debts, his income would be smaller. The undeniable stimulus exerted by the hope of a larger income would be almost nil. Young men of less ability would be attracted to the profession. Useless examinations would be multiplied. With the increase in number of

\*Litzenberg, J. C.—Socialism and the practice of medicine. Minn. Med., Vol. 3, No. 11.

Andrews, J. W.—Social insurance. Minn. Med., Vol. 3, No. 12, Appendix p. VI.

Hoffman, F. L.—Compulsory health insurance and the medical profession. Minn. Med., Vol. 4, No. 2.

examinations less careful and thorough work would be done.

Whe whole scheme of state insurance is un-American. The typical American much prefers the personal element more truly present between private physician and patient, and which gives much of the charm to the practice of the greatest profession in the world.

We are heartily in favor of insurance against sickness. Many of the larger business houses, guilds and professions are carrying on this from of insurance very satisfactorily. The individuals directly benefited pay the premiums. But for the sake of all concerned let us not have Compulsory State Health Insurance.

### PRIVILEGED COMMUNICATIONS

The bulwark which has so long protected physicians in their relations with patients seems to be seriously undermined by a decision of a Nebraska court, which in effect says that a physician not only is justified but also bound to reveal the confidential statements of a patient, when by withholding such information another person's health may be injured. This attitude of the courts is novel, but has its basis in the recognition by courts of the germ theory of disease and the beneficent effects of a policy which would prevent contagion.

Under the common law there is no such thing as privileged communication. It was held that no facts should be withheld in the search for justice, irrespective of the personal difficulties that might result. In theory this is true. But public policy has in this country swayed nearly all the state legislatures to pass statutes which excuse a physician from disclosing any fact which it was necessary for him to know in order properly to diagnose or treat disease. Thus the purposes of law were subordinated to personal privileges.

The new aspect of the relation of the physician to his patient is a modern innovation and should have very restricted application. It might be deemed wise policy for a physician to be allowed to disclose the existence of venereal disease in a patient if thereby contagion could be prevented. It is, however, hard to see how in any other relation such a policy would be productive of good. It would hardly seem proper, for instance, to allow a physician to

testify as to the facts of pregnancy, miscarriage, pelvic disease or other intimate facts of the personal history of his patient, where no such special advantage to the general community can be conceived.

Public policy is to be regarded as the criterion by which such communications should be privileged. Public policy concerns the general welfare, and it is a matter of doubt whether the recent decision can be upheld under that plea. If the physician were not excused from revealing the secret facts of a patient's life, how difficult would it be for the physician to receive from his patient such a necessary fact for diagnosis and treatment as the previous existence of syphilis. What patient would not refuse to admit such disease if he believed that the physician would not regard the communication as privileged. Would not greater harm be done to the general public by the concealment of such information, than by its admission under the former pledge of silence.

It is of course true that years ago when the laws of privileged communication were passed by various legislatures, venereal disease was not regarded with the seriousness with which fuller knowledge in recent years has surrounded it, and perhaps the tendency of the courts is toward what it believes to be the greater protection of the public and a more open attitude in regard to diseases which formerly were not publicly spoken of. In this respect there may be a grain of wisdom. But it is to be feared that the new attitude of the courts may reach in other directions in a manner calculated to overbalance the expected benefit by disastrous consequences of the destroyed confidence of the patient in the physician.

The doctor must have the truth from his patient. The patient must be assured that his statements to the physician will be kept in confidence. Where either of these conditions do not obtain incalculable harm is sure to result. Wise public policy should direct that any change in the relation between patient and physician should be brought about only under direct necessity and after weighing all the disadvantages as well as apparent benefits.

A. S.

### TORTS AND THE STATUTE OF LIMITATIONS

Now that the Legislature is in session, the members of the Medical profession, throughout the State, ought to give serious attention to the matter of remedying a defect in the laws of Minnesota with respect to the time within which suits for malpractice may be commenced.

Under the laws as they now stand, actions for "libel, slander, assault, battery, false imprisonment, or other tort resulting in personal injury" must be commenced within two years after the accrual of the cause of action. By another section of the statutes it is provided that actions for "criminal conversation, or any other injury to the person or right of action not arising on contract and not hereinafter enumerated" shall be commenced within six years. Upon the face of these statutes, one would suppose that an action for malpractice, which is really founded on a charge of negligence, ought to be included in the two year statute. However, some years ago our Supreme Court, construing these statutes, held, by a divided court, Justice Mitchell dissenting, that actions for personal injuries, founded on negligence, are governed by the six year and not the two year limitation. Since that time all personal injury actions, including malpractice actions, have been treated as governed by the six year statute.

The medical profession, as a class, are, of course, not concerned with the question as to what shall be the limitation of time within which actions for personal injuries generally shall be brought. But they are vitally concerned in the question as to what shall be the limitation of time within which actions for malpractice shall be brought. To permit such actions for malpractice to be commenced after a lapse of six years, from the time that the patient was treated, often results in great injustice to the physician or surgeon sued. In most all of such cases, nurses are vital witnesses. In the very nature of things, considering the fact that nurses are usually temporarily employed, or are merely serving their apprenticeship, and move about to all parts of the country before they settle down to some permanent employment or marry, it often occurs that they are unavailable as witnesses

when the trial is long delayed. Very often the hospital records are vital as evidence in behalf of the medical man sued, and these cannot be used unless the nurses who made them are available as witnesses. Any person who has a meritorious malpractice case can, without hardship, arrange to start such case within a period of two years.

In many states the period within which a suit for malpractice must be commenced is even less than two years. In Alabama, California, Delaware, Kentucky, Louisiana, Ohio, Tennessee, Texas, Virginia and West Virginia, the period of limitation, for the bringing of malpractice cases, is one year. In Arizona, Colorado, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, New York, North Dakota, Oregon, Pennsylvania, Rhode Island and Wisconsin, it is two years. In various other states it is three or four years. In one state it is five years. And in only six states in the entire Union is the period six years. Thus in the vast majority of states, the sound reasons for requiring suits for malpractice to be commenced within a reasonable period of time, not exceeding two years, has been recognized. Medical men throughout the state should unite to bring this matter to the attention of the members of the Legislature, to the end that this defect in the laws of the State should be corrected, in justice to the medical profession.

### REPORTS AND ANNOUNCEMENTS OF SOCIETIES

The Southern Minnesota Medical Association held a meeting on November 29th and 30th, 1921, at Mankato. The program was a most interesting one and the visiting doctors who added interest to the program were Dr. Hugh Cabot, Ann Arbor, Mich.; Dr. E. B. Freeman, Baltimore, Md.; Dr. Harry E. Mock, Chicago; Dr. Frank Smithies, Chicago, Dr. Ruben Peterson, Ann Arbor; Dr. H. Winett Orr, Lincoln, Neb.; Dr. Emil G. Beck, Chicago; Dr. Truman W. Brophy, Chicago, and Dr. Wm. L. Shearer, Omaha.

The following officers were elected:

Dr. Wm. J. McCarthy, Madelia, president; Drs. Edward Keyes, Winona, and Walter R. Ramsey, St. Paul, vice president; Dr. H. T. McGuigan, Red Wing, secretary, Dr. G. F. Merritt, St. Peter, treasurer, and Dr. A. F. Schmitt, Mankato, managing-director.

The next meeting will be held in Winona during the last week in June, 1921.

## OBITUARY

Dr. Jasper Bedint died at his home in Kasson, Minnesota, on November 24, 1920, at the age of eighty-two years.

Dr. Wm. Hambroer, of Eden Valley, Minnesota, died on November 19, 1920, at the age of seventy-two years.

Dr. O. W. Anderson, of Rochester, Minnesota, died at his home December 26th, at the age of eighty years.

Dr. F. R. Mosse, of Rochester, Minnesota, died on December 25, 1920, at the age of sixty-five years.

Dr. Florado H. Welcome, of Minneapolis, died on December 22, 1920, at his home, at the age of sixty-two years.

Dr. Frederick R. Baldwin, physician at Glen Lake Sanatorium, died at the University Hospital in November, 1920.

Dr. John Gooch Whittemore, of Donnelly, Minnesota, died at his home on November 22, 1920, at the age of forty-nine years.

## OF GENERAL INTEREST

Dr. C. M. Pearson, M. D. has moved from Ambrose, N. D., to Breckenridge, Minnesota.

Dr. Arthur E. Ferriay, of Worcester, Massachusetts, has located in Rochester, Minnesota.

Dr. F. P. Silvernale and Dr. S. Erickson succeed Dr. H. P. Blong, at Elmore, Minnesota.

Dr. O. M. Sanderson, of Minnesota, is taking a postgraduate course this winter in Chicago.

The Interurban Clinical Society held a very successful meeting in Rochester early last month.

Dr. F. E. Engstrom has returned to Wanamingo, where he will resume practice of medicine permanently.

Dr. Dennis W. Sullivan, of Milbank, Minnesota, has received a commission as captain in the United States Army.

Dr. Scott Searles formerly, of Crookston, is now associated with the Murphy Radium Service, Besse Building, Minneapolis.

The marriage of Dr. Clyde A. Undine and Miss Effie Donna Heighstedt took place December 30, 1920, at Minneapolis, Minn.

Dr. M. S. Henderson, of Rochester, was elected President of the Central States Orthopedic Club at the recent meeting in Chicago.

Dr. Leslie Grant Hill, of Sioux Falls, S. D., announces the removal of his offices from The Moe Hospital to the Boyce-Greeley Building, Suites Nos. 459-461.

At a meeting of the Clay-Becker Medical Society in December, Dr. B. T. Bottolfsson, of Moorhead, was

elected president, and Dr. O. Larson, of Detroit, secretary and treasurer.

Dr. William B. Wright, Jr., formerly associated with Dr. Justus Matthews, of Minneapolis, is now engaged in practice limited to the nose and throat, in Los Angeles, California.

Drs. E. H. Frosh, P. C. Davison, B. J. Branton, A. F. Branton and C. J. Ahrenberg, have combined forces in Willmar, Minnesota, into what will be known as the Willmar Hospital and Clinic.

Last August Dr. Keen presided over the International Congress of Physicians and Surgeons, in Paris. Dr. Keen has served as a medical officer in the Civil, Spanish-American and World wars.

Dr. King and Dr. Hook, who have been assigned to the Mayo Foundation by the Navy Department for a short period of study, have each recently been awarded a Navy Cross for extraordinary heroism in action.

Dr. S. M. White, Professor of the Medical School, University of Minnesota, gave an address by invitation before the Chicago Medical Society, Wednesday evening, January 12, on "The Clinical Application of Digitalis."

Dr. Ernest Strader, of Louisville, Ky., is the new medical director of the Buena Vista Sanatorium, succeeding Dr. W. D. Beadie who has been made Executive Secretary of the Ramsey County Public Health Association.

Alpha Omega Alpha, medical scholarship fraternity, announces the election of the following members; Clarence M. Jackson, (honorary), J. A. Myers, Ruth E. Boynton, David H. Johnson, Roger L. J. Kennedy and Charles E. Merkert.

Dr. J. Arthur Myers announces the removal of his offices from the Metropolitan Bank Building to 323 LaSalle Building, Minneapolis, where he will continue the practice of internal medicine, giving special attention to diseases of the lungs.

Dr. W. W. Covell, of St. Peter, was elected president of the Nicollet-LeSueur County Medical Society, at the meeting held in December. Dr. J. W. Daniels was elected vice president; Dr. Daniel W. MacDougal, treasurer, and Dr. Jos. E. LeClerc, secretary.

Federal Dam, Minnesota, is without a physician. This is a good community and should prove an attractive location. Any one interested should communicate with Mr. William R. Bourdon, Secretary of the Federal Dam Community Club of Federal Dam.

Dr. R. L. Kirsch, of Crookston, was elected president of the Red River Valley Medical Association at their meeting in December. The other officers elected were: Dr. A. L. Holland, Argyle, vice president; Dr. H. M. Blegen, Warren, secretary-treasurer.

Dr. E. W. Buckley, of St. Paul, has recently been appointed chairman of the National Committee of the Knights of Columbus, to investigate tuberculosis in the United States. This committee will study the tuberculosis situation in the United States and con-

sider the advisability of constructing a large national sanatorium for the Order.

Dr. F. Thompson, of Chicago, was elected president of the Soo Line Surgical Association, at its annual meeting in Minneapolis in December. Dr. P. E. Pilar, of Paynesville, Minnesota, was elected vice president, and Dr. John H. Richmiller, of Minneapolis, Chief Surgeon for the railroad, secretary and treasurer.

Dr. E. W. Buckley, of St. Paul, has attained international prominence through his work as Supreme Physician of the Knights of Columbus. On his visit to Europe during the summer of 1920 he was decorated with the French Legion of Honor, The Star of Morocco, and was made a citizen of Paris. In Rome he was decorated by the Pope with the Order of the Knights of St. Gregory.

Dr. Henry Helmholz, of Chicago, has gone to Rochester as Professor of Pediatrics in the Mayo Foundation and Head of the Section on Pediatrics in the Mayo Clinic. Since returning from two years of graduate study in Berlin and Breslau, Dr. Helmholz has been Assistant Professor of Pediatrics in Rush Medical School and Chief of Medicine in the Children's Memorial Hospital, Chicago.

Dr. J. F. Corbett, of Minneapolis, has resigned from his full-time salaried position in the Medical School, but retains his rank as Associate Professor of Surgery, and expects to continue in the University Clinical service at the Minneapolis General Hospital. The newspaper report that his resignation of his former position was in any way due to the Mayo Affiliation, was incorrect and misreported.

The Minnesota State Board of Health has been particularly active in the past four months in the prosecution of violators of recent laws enacted for the control of venereal diseases. In addition to the arrest of individuals for delinquency in treatment, two physicians in the state have been prosecuted for failure to report cases, and in October two druggists were successfully prosecuted for selling remedies in violation of this same law.

On January 20, 1921, a testimonial dinner was given Dr. W. W. Keen, the well known surgeon of Philadelphia, by his many friends in celebration of his eighty-fourth birthday. A life size bronze bust of Dr. Keen, made by Samuel Murray, the Philadelphia sculptor, was presented to him upon this occasion. On his last trip to Europe Dr. Keen was decorated by the Belgian Order of the Crown by King Albert for the services he gave during the war.

The Minnesota Public Health Association column which formerly appeared in Minnesota Medicine has been discontinued, as this Association resumed publication of the Minnesota Health Journal in September, 1920. The Minnesota Health Journal is published weekly in sixteen page issues, and the subscription is only twenty-five cents a year. Physicians desiring to subscribe should address the Association at the Shubert Building, St. Paul, Minnesota.

Dr. Braasch has recently returned to the Mayo Clinic after three weeks absence attending meetings in the east. He attended the meeting of the executive committee of the American Urologic Association of which society he is president. Dr. Braasch acted as chairman of the executive editorial committee of the Journal of Urology at which meeting arrangements were completed for the first number of the journal as the official organ of the American Urologic Association.

The fifth annual session of The American Congress on Internal Medicine will be held at Baltimore, Md., week of February 21-26, 1921. The activities of The Congress will be largely clinical. Ward-walks, laboratory demonstrations and group or amphitheatre clinics will be conducted daily by members of the medical faculties of The Johns Hopkins and The Maryland universities. Further information may be secured by addressing The Secretary-General, 1002 N. Dearborn Street, Chicago, Ill.

Dr. Kendall of Rochester, has received notification from the Secretary of the Board of Directors of the City Trusts of Philadelphia that he has been awarded the John Scott Medal and premium of \$800.00 for his work on thyroxin. In 1816, John Scott, a Chemist of Edinburgh, bequeathed \$4,000 to the City of Philadelphia, the interest of which was "to be laid out in premiums to be distributed to ingenious men and women who make useful inventions . . ." The chemical investigation of the thyroid was begun by Kendall in 1919. The iodine-containing compound was isolated in 1914 in pure crystalline form. The chemical structure of this compound was shown in 1917 to be 4, 5, 6 tri-hydro-4, 5, 6 tri-iodo-2 oxy,—beta indolepropionic acid, and it was named thyroxin from its chemical nucleus (oxy-indol). Since that time it has been shown that thyroxin possesses the physiologic activity of the thyroid gland. It relieves all symptoms of myxedema and induces growth in cretins. Thyroxin controls the rate of oxidation in the body; 1 mg. increases the basal metabolic rate 2 per cent.

During the St. Paul clinic week there was organized at Fort Snelling The Northwestern Medical Officers Association of the World War. Membership is limited to physicians, surgeons and dentists who served in the army or navy of the United States in any of our wars or the army or navy of the Allies during the World War.

The object as quoted from the constitution—"Shall be to foster the spirit of patriotism and good fellowship which characterized the medical profession during the great war and to assist by its influence any measures for the good of the service."

There should and will be an opportunity for constructive work by this organization during the years to come.

The time and place of the annual meeting is in the hands of the executive committee.

Every former medical officer in the Northwest

should join before March 1st. By so doing he becomes a charter member. Send one dollar for annual dues together with your name, rank and organization to the secretary-treasurer, Dr. F. J. Savage, Lowry Bldg., St. Paul, Minn.

The following officers and executive committee were nominated by the nominating committee and duly elected: President, Dr. Thos. J. Maloney, St. Paul; vice president, Dr. Arthur S. Hamilton, Minneapolis; secretary-treasurer, Dr. F. J. Savage, St. Paul, Executive committee—(physicians)—Dr. Warner G. Workman, Tracy, Minn.; Dr. Knox Bacon, St. Paul; Dr. F. O. Brigham, Stanley, N. D.; (dentists) Dr. Sam Ziegler, St. Paul; Dr. Tournquist, Minneapolis.

## NEW AND NON-OFFICIAL REMEDIES

During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

### Calco Chemical Co.:

Salicaine.

### Coleman Laboratories:

Bacillus Bulgaricus.

### E. R. Squibb and Sons:

Procaine.

H. T. Procaine.

Solution Tablets Procaine.

### Winthrop Chemical Co.:

Adalin Tablets 5 grains.

Veronal Tablets 5 grains.

Novaspirin Tablets 5 grains.

### Lederle Antitoxin Laboratories:

Typhoid Glycerol-Vaccine.

Typhoid Combined Glycerol-Vaccine.

Pertussis Glycerol-Vaccine.

Pneumococcus Glycerol-Vaccine.

### The Beebe Laboratories:

Pneumococcus Vaccine No. 14.

Typhoid-Paratyphoid Vaccine No. 39.

Colon Vaccine (Acne) No. 11.

Acne (Mixed) Vaccine No. 10.

### Nonproprietary Articles:

Phenetsal.

Saligenin.

**Mercury (mercuric) Benzoate-Seydel.**—A brand of mercuric benzoate (See New and Non-official Remedies, 1920, p. 181) complying with the N. N. R. standards. Seydel Manufacturing Co., Jersey City, N. J. (Jour. A. M. A., Dec. 4, 1920, p. 1569).

**Culture of Bacillus Bulgaricus-Coleman.**—A pure culture of bacillus bulgaricus, marketed in bottles containing about 90 c.c. This culture is stated to be suitable for all purposes for which bacillus bulgaricus is used (See general article on Lactic Acid Producing Organisms and Preparations, New and Non-official Remedies, 1920, p. 156). Coleman Laboratories, Wheeling, W. Va. (Jour. A. M. A., Dec. 18, 1920, p. 1717).

**Pneumococcus Glycerol Vaccine (Types I, II, III, Polyvalent)—Lederle.**—A suspension of killed pneumococci of characteristic strains of Types I, II, and III (equal proportions) in a vehicle composed of glycerol, 66 per cent; physiological solution of sodium chloride, 33 per cent, and cresol, 1 per cent. Supplied in packages of three vials containing the glycerol vaccine and of three vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. For a discussion of the actions and uses of pneumococcus vaccine, see New and Non-official Remedies, 1920, p. 286. Lederle Antitoxin Laboratories, New York.

**Pertussis Glycerol Vaccine-Lederle.**—A suspension of killed pertussis bacteria (Bordet) of eight strains, in a vehicle composed of glycerol, 66 per cent; physiological solution of sodium chloride 33 per cent, and cresol, 1 per cent. The product is supplied in packages of five vials containing the glycerol vaccine, and five vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. For a discussion of the actions and uses of pertussis bacillus vaccine, see New and Non-official Remedies, 1920, p. 235. Lederle Antitoxin Laboratories, New York.

**Typhoid Glycerol Vaccine (Prophylactic)—Lederle.**—A suspension of killed typhoid bacteria (Rawling's strain) in a vehicle composed of glycerol, 66 per cent; physiological solution of sodium chloride 33 per cent, and cresol, 1 per cent. The product is supplied in packages of three vials containing the vaccine, and three vials of diluent with which to make the proper dilution of the vaccine at the time of injection. For a discussion of the actions and uses of typhoid vaccines, see New and Non-official Remedies, 1920, p. 291. Lederle Antitoxin Laboratories, New York.

**Typhoid Combined Glycerol Vaccine (Prophylactic)—Lederle.**—A suspension of killed typhoid bacteria (Rawling's strain), 50 per cent; killed paratyphoid bacteria, Type A, 25 per cent, and killed paratyphoid bacteria, Type B, 25 per cent, in a vehicle composed of glycerol, 66 per cent; physiological solution of sodium chloride, 33 per cent, and cresol 1 per cent. The product is supplied in packages of three vials containing the vaccine, and three vials of sterile diluent with which to make the proper dilution at the time of injection. For a discussion of the actions and uses of typhoid vaccines, see New and Non-official Remedies, 1920, p. 291. Lederle Antitoxin Laboratories, New York (Jour. A. M. A., Dec. 25, 1920, p. 1783).

### PROPAGANDA FOR REFORM

**More Misbranded Nostrums.**—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: Linonine (Kerr Chemical Co.), held misbranded on the ground that the curative claims were held false and fraudulent. Valentine's Sarsaparilla Compound with Potassium Iodide (Allan Pfeiffer Chemical Co.), sold under therapeutic claims which were false and fraudulent. Olive Branch (Olive

Branch Remedy Co.), misbranded in that the curative claims were false and fraudulent. Prince's Pills, Liniment and Tru-Vigor Nerve Tablets (Poston Drug and Chemical Co.), misbranded in that the therapeutic claims made for them were held false and fraudulent. Mrs. Summers' Absorbent Pile Remedy, Mrs. Summers' Womb, Ovarian and Kidney Tonic and Vitalizer Tablets and Mrs. Summers' Heart, Brain and Nerve Pills (Vanderhoof and Co.), misbranded in that they were sold under therapeutic claims which were false and fraudulent. Compound Syrup of Hypophosphites, Bromo Febrin, Hystoria, Aromatic Cod Liver Oil, Red Cross Kidney and Liver Regulator, White Pine and Tar Syrup, and Boro-Thymine (Cal-Sino Co.), misbranded in that the therapeutic claims were false and fraudulent (some were also held adulterated because their composition was misleading or falsely declared) (Jour. A. M. A., Dec. 11, 1920, p. 1663).

**Physician's Stock in Prescription Products.**—Is the public getting a square deal when physicians are financially interested in the products that they may be called on to prescribe? Is the average layman's confidence in the medical profession likely to be enhanced when he learns that the physician to whom he went for treatment has a financial interest in the therapeutic agent which was prescribed? It cannot be too often emphasized that it is against public interest and scientific medicine for physicians to be financially interested in the sale of products which they may be called on to prescribe for the sick. It is perfectly true that there are many physicians who would not consciously permit financial considerations to warp their judgment, but it is not humanly possible to remain unbiased in cases of this sort (Jour. A. M. A., Dec. 11, 1920, p. 1662).

**The Parry Medicine Co. barred from the Malls.**—For some years Pittsburgh has harbored a quack concern known as the Parry Medicine Company. The president of the company was one Leonard L. Parry, who advertised himself as "Dad Parry, the Healer," and also as "The Miracle Man." In April, 1917, Parry, who is an obviously ignorant faker, was arrested and convicted of the illegal practice of medicine and was sentenced to pay a fine and to serve a six months sentence in jail. Apparently as soon as Parry got out of jail he went right back to his quackery. As a result the federal authorities took action, and the Parry Medicine Co. has been denied the use of the mails. The "medicines" put out by the Parry concern were fourteen in number and were numbered consecutively. They were essentially the same in composition, differing only in flavoring. Each was composed approximately of alcohol, 25 per cent; water, 25 per cent, and olive oil, 50 per cent, to which was added a few drops of essential oils. No. 1 was for tuberculosis, lungs, bones or flesh, gallstones or tapeworm. No. 2 was for cancers, adenoids, hemorrhoids, piles, asthma, goiter, typhoid and all other fevers. Extensive curative claims were similarly as-

cribed to the remaining twelve preparations (Jour. A. M. A., Dec. 18, 1920, p. 1732).

**German Institute for Examination of Pharmaceuticals.**—It is proposed that the commission founded years ago by the German internists—the *Arzneimittel-Kommission*—is to be changed into an institution to investigate new pharmaceutical articles and supply information thereon to physicians on demand. An information bureau and bibliographic center is planned, and it is proposed to test new inventions for the manufacturers. The commission announces that it has been decided not to restrict the examinations to the chemical, pharmaceutical and pharmacologic side of the matter, but in given cases tests and investigations at the bedside will be made. It is stated that the pharmacologic investigations are to be made at the pharmacologic institute of the University of Berlin, which is in charge of Heffter, and that the institute is to be the headquarters of the new *Prüfungsamt* (Jour. A. M. A., Dec. 25, 1920, p. 1791).

## NEWS OF THE HOSPITALS

Dr. Mitchell of the St. Paul Hospital staff returned recently from an Eastern trip.

St. John's Hospital, St. Paul has added the Coolidge System to its X-Ray department.

Northwestern Hospital of Minneapolis will soon inaugurate a Metabolic department.

W. Mills Superintendent of the Swedish Hospital, Minneapolis has fully recovered from the illness that he recently suffered.

The annual meeting of Mounds Park Sanitarium, St. Paul was held January 11; Midway and Merriam Park Hospitals, were represented. No change in the personnel of the executive staff was reported.

The 1921 Class of the West Side General Hospital, St. Paul was graduated on the evening of January 11, when six student nurses received their diplomas. During the year just passed the Hospital cared for 1134 patients.

A series of parties for convalescing service men has been held at St. Luke's Hospital, St. Paul during the past month. At the Christmas party, staged by the American Legion, splendid gifts were distributed, among them being a special surprise package from Mrs. James J. Hill.

The General Hospital of Minneapolis has just admitted seven students for an eight months Laboratory course and the Hospital is keeping the Minneapolis Medical profession supplied with Laboratory graduates. Inquiries are coming from various parts of the country concerning the General Hospital's course in Anesthesia.

The management of The Oconomowoc Health Resort, Oconomowoc, Wisconsin, announce the opening of two new buildings. One is for chronic nervous cases, and the other is an isolated building for "Rest Cure" patients. The latter units conform in construction to the previous ones, being absolutely fire-

proof. The classification of patients is complete in every respect.

St. Joseph's Hospital Alumnae Association held their regular meeting Friday, January 14, at 3 p. m. The following officers have been re-elected for the coming year: Miss Anne Lawler, president; Miss M. Rau, vice president; Miss M. Bleaner, secretary; Sister M. Oswald, treasurer. Board of Directors: Sister M. Jerome, Miss B. Culliton, Miss Ann Grady.

Dr. Baldwin, Superintendent of Miller Hospital, St. Paul was in Chicago the early part of the month. He has prepared a series of articles on Hospital organization which, it is reported, will be published in *Modern Hospital*. Dr. Baldwin's method of Business Administration is unique, as well as that of his assistant, A. G. Stasel who has evolved an original Institutional Accounting System that has attracted the favorable attention of many Northwest Institutions.

whom the physical signs decrease has proportionately a seven to five better chance of remaining well and double the chance of not dying within five to eleven years after discharge when compared with a patient in whom the signs increase.

In this series there were 511 cases discharged as arrested. In 1918 (five to eleven years later) 68.3 per cent of these were well, 11.5 per cent were living, 19.0 per cent were dead and 1.2 per cent were untraced.

In dealing with the total 979 cases regardless of the admission or discharge condition and also of physical signs 63.8 per cent were well, 13.3 per cent were living, 21.5 per cent were dead after a period of from five to eleven years after discharge.

Dr. Trudeau concludes that physical signs and symptoms cannot be compared separately, but should be considered together in making a prognosis.

J. A. MYERS.

## PROGRESS

Abstracts to be submitted to Section Supervisors.

### MEDICINE

#### SUPERVISORS:

F. J. HIRSCHBOECK,  
FIDELITY BLDG., DULUTH.  
THOMAS A. PEPPARD  
LA SALLE BLDG., MINNEAPOLIS

**THE IMPORTANCE OF PHYSICAL SIGNS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS:** Francis B. Trudeau (*Amer. Rev. of Tub.* Vol. 4, No. 7). A study was made of the physical signs particularly rales, on admission and discharge of 979 patients discharged from the Trudeau Sanatorium from 1907 to 1913. The average residence of these patients in the sanatorium was five and one-half months during which time 43.1 per cent showed an increase in their rales, 40.6 per cent showed a decrease and 16.2 per cent remained stationary. The 1918 reports of these patients showed that of those who developed increased signs during their residence 52.9 per cent were well (working for past two years), 14.7 per cent were living (had either relapsed or become chronic), 31.0 per cent were dead, and 1.4% were untraced. Of the patients whose physical signs decreased during their residence 69.8 per cent were well, 12.8 per cent were living (had either relapsed or become chronic), 15.8 per cent were dead, and 1.5 per cent were untraced. The patients whose physical signs remained stationary presented the best records as 78.0 per cent were well, 10.7 per cent were living, 10.1 per cent were dead, and 1.2 per cent were untraced, however, 49.0 per cent of the patients in this group were without rales while in the sanatorium.

From the above figures it is seen that a patient in

**SOME PROBLEMS IN THE DIFFERENT DIAGNOSIS OF PULMONARY TUBERCULOSIS:** James Alexander Miller (*The Amer. Rev. of Tub.*, Sept., 1920). The problem the author presents is not the diagnosis of early pulmonary tuberculosis but the conditions which simulate a beginning phthisis. These latter conditions are not infrequently diagnosed tuberculosis and the patients consigned unnecessarily to a sanatorium. Although probably less harm is done by pronouncing a non-tuberculous case tuberculous, than by labeling a tuberculous case as non-tuberculous, there must result dissatisfaction over the inaccurate diagnosis as well as over the injustice rendered and in some instances hardship caused by the stamp of a much dreaded disease.

The conditions reviewed are divided into two groups:—

(1) Those in which the history and symptoms are suspicious of tuberculosis, but the local lesion is slight and difficult to find. A problem in physical diagnosis.

(2) Those presenting very definite physical signs in the lungs. A problem of interpretation.

I. Those in which suspicious symptoms predominate. (a) General asthenia.—Usually women and children whose strength and endurance are slight and who suffer from nervousness, indigestion, etc. They may be subject to recurrent colds and infection. By proper supervision and management of their mode of living, improvement is usually noted, health restored and by delaying his diagnosis the physician safeguards himself and renders justice to his patient. (b) Neurasthenia.—These exhibit a predominance of nervous symptoms which may be an expression of tuberculous toxemia but generally not. Irregular elevations of temperature may occur explained as being due to disturbances of the sympathetic nervous system. Prolonged observation with a regular regimen of life supplies the correct diagnosis and meets the indications for treatment. (c)

Hyperthyroidism and other disturbances of internal secretions.—The chief complaints of these patients are malaise, loss of weight, general nervousness, digestive disturbances and at times a chronic unproductive cough with thyroid enlargement. A frequent source of error in these cases in the slight elevation in temperature in the afternoon which is accentuated by exertion or excitement. Examination of these patients discloses fine tremor of the hands, tachycardia, slight thyroid enlargement, exaggerated tendon reflexes and possibly exophthalmos. The Goetch test (hypodermic injection of adrenalin) usually gives a distinct reaction.

Other conditions are hypothyroidism, and general symptoms of nervousness and disturbed nutrition seemingly associated with abnormal function of the ovarian or adrenal internal secretions. Observation, regulation of mode of living, organo-therapy, and in hyperthyroidism surgery, frequently gives satisfactory results and establishes a clear diagnosis. (d) Chlorosis.—A primary anemia in young girls which simulates tuberculosis. A close study of the blood, close supervision, rest, proper diet and prolonged observation clear the diagnosis. (e) Fever of obscure origin.—Fever constitutes the chief early manifestation of many conditions of which the focal and pathognomonic signs of symptoms are often slow in developing. Pulmonary tuberculosis is one of the most frequent of these but there are many others.

Some of the common febrile conditions with which tuberculosis may be confused are:

(1) Typhoid and paratyphoid fever.—When associated with bronchitis and its accompanying cough the early differential diagnosis is not easy. The physical signs in the lungs, however, are not definitely and persistently localized and are bilateral at the bases. Definite evidence such as positive blood culture or widal or rose spots with enlarged spleen should be had before typhoid or paratyphoid is diagnosed. (2) Malaria.—Many cases of tuberculosis are treated for malaria, which is the result of superficial study and examination. Malarial plasmodia can be demonstrated as a rule with little difficulty. (3) Influenza.—Another ready answer used by the careless physician to explain an obscure febrile attack. Continued observation, numerous sputum examinations, careful X-ray examination will in the majority of cases clear up any doubt. (4) Focal infection.—When associated with fever and mild constitutional reaction and with chest pains or sometimes cough, the differentiation from obscure tuberculosis lesions is far from easy. Teeth, tonsils, upper air passages, especially nasal sinuses, intestines and genitourinary tract are frequent offenders. In this difficult field only painstaking search will reveal the true situation. (5) Septic endocarditis.—Frequently overlooked and mistaken for tuberculosis. The murmurs of valvular disease, the irregular temperature, with or without chills, the petechiae, the enlarged spleen, leucocytosis

and finally the positive blood culture constitute the findings upon which the diagnosis rests.

In this whole group of cases exhibiting indefinite constitutional symptoms the suspicion of possible tuberculosis should be always kept in mind because of its great frequency.

## II. Cases Presenting Physical Signs in the Lungs, A Problem of Interpretation:

In this group the problems generally are more difficult because with definite lung findings the danger lies in making a definite diagnosis of tuberculosis which does not exist. Usually the physical signs are marked and the patient complains of cough with expectoration. A persistently negative sputum should arouse the suspicion that a nontuberculous lesion is present because extensive pulmonary tuberculosis with persistently negative sputum is very rare. The X-ray is exceedingly valuable in this group giving information unobtainable by physical examination and often establishing a certain diagnosis.

(1) Emphysema and chronic bronchitis.—A very common condition that is confused frequently with phthisis. The history of cough of long standing, worse in the winter, with attacks of asthma not infrequent, is suggestive. The chest findings are usually bilateral and wide-spread, having a predilection for the bases and varying in extent from day to day. Tuberculosis is not infrequently associated with this condition being masked by it. Careful sputum and X-ray examination are the two most important diagnostic aids to use.

(2) Subacute or chronic bronchopneumonia or peribronchitis. An interesting and common group, especially since the influenza epidemic, which is frequently mistaken for tuberculosis. The symptoms are mild. Cough and expectoration marked frequently hemoptysis. The physical signs are similar to those of tuberculosis infiltration but as a rule in the bases. Repeated sputum examinations, X-ray examination and the disappearance of signs and symptoms more quickly than tuberculosis would do, differentiates the condition from phthisis.

(3) Bronchiectasis.—The physical findings tho usually in the lower lobes posteriorly may sometimes be in the upper. The signs may give evidence of pleuritic adhesions, consolidation, localized bronchitis or rarely a definite cavity. The history of chronic cough and profuse expectoration; negative sputum and a fairly typical X-ray picture with the above mentioned physical findings make a very definite clinical picture but one which is not infrequently confused with tuberculosis.

EVERETT K. GEER.

CAN THE GALL-BLADDER, BILIARY DUCTS, AND LIVER BE MEDICALLY DRAINED? B. B. Vincent Lyon (Amer. Jour. of Med. Sc., Oct., 1920.) This is the fifth of a series of papers on the gall-bladder, devoted especially to some of the aspects of

diagnosis and treatment of cholecystitis and cholechochitis by a method of physiologic drainage. In his previous papers, the author has described the details of his method, the drainage of the biliary system by means of duodenal catheterization and the application of a 25 per cent solution of magnesium sulphate to the duodenal mucosa. He reviews the anatomy and physiology of the biliary system, and the clinical-pharmaceutical action of the magnesium sulphate on which the rational use of his method is based. He reviews also the diagnostic possibilities of this method, and urges its adoption by the medical profession in the interest of more accuracy in the diagnosis of gall-bladder disease.

As a result of a rather intensive study of 309 patients, upon whom he has performed a total of 2240 biliary drainages, he concludes that the gall-bladder has a definite function, that of acting as a reservoir for the bile secreted by the liver, and of furnishing the same in concentrated form and in appropriate dosage to the duodenal mucosa, in response to the stimulation of the same by especially the fats, proteoses and peptones of the gastric chyme. This is emphasized as he deprecates the present day tendency to the frequent unnecessary operative interference for drainage or removal of the gall-bladder, thus subjecting the patient not only to unnecessary operative procedure, but also to the later disturbing influences of a continuous flow of bile into the duodenum. He proposes his method of drainage, not to supercede the very necessary surgery—i. e. for removal of calculi, for the drainage of acute or chronic empyema, or for the relief of mechanical obstruction, but rather as an alternative method of treatment of many types of gall-bladder and duct disease, in which there arises a question of opinion as to whether surgery is or is not emphatically indicated. He points to its use for the relief of biliary stasis, especially in its early states as evidenced clinically in the various forms of "biliousness", on the basis that it is biliary stasis that is the forerunner of inflamed and infected gall-bladders and gall ducts, and eventually of gall stones. It is for the purpose of prevention of gall-bladder disease and its sequelae, by attacking this biliary stasis, that he urges the adoption of his method, rather than for the correction of full blown stages of formed calculi and active catarrhal infection.

One striking instance of the practical use of this method of drainage is cited, that of the convalescent typhoid whose stools persist in showing the typhoid bacillus, and who must, therefore, be retained as a typhoid carrier. The possible etiological relation between typhoid and cholecystitis has long been recognized. The author believes the presence of the typhoid bacillus in the stools may be due to gall-bladder infection, that this again results from biliary stasis with secondary typhoid infection, and that much can be done to clean up a typhoid carrier and prevent later gall-bladder sequelae by frequent use

of this non-surgical drainage of the gall-bladder. He likewise advocates its use as a supplementary method of postoperatively continuing the surgical principles of drainage in those cases incompletely cured by surgical measures alone. Selected case reports are given to present the merits of his method of treatment.

L. S. YLIVISAKER.

#### PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE ASSOCIATED WITH MITRAL STENOSIS:

Joseph Garland and Paul D. White (Arch. of Int. Med., Sept., 1920.) The writers believe that this association is more common than is ordinarily recognized. It was first described by Ortnier in 1897. Including Ortnier's cases, 61 cases of a similar nature have been described since that time. Garland and White's report is based on 9 additional cases.

The anatomical etiology has been the subject of a good deal of discussion, the most common view being that it is due to pressure of the enlarged left auricle on the left recurrent laryngeal nerve. Fetterols and Norris have shown that direct compression of the auricle on the nerve is practically impossible, and believe that it is due to the nerve being squeezed between the left pulmonary artery and the aorta or aortic ligaments. The paralysis is due probably to a pressure neuritis rather than an actual destruction, although Ortnier's 2 cases showed distinct atrophy.

In several instances the first symptom complained of by the patient on consulting the physician was the accompanying hoarseness, leading later on to the discovery of the mitral stenosis. Garland and White believe that the pulmonary artery must be the immediate factor that is causing the pressure, and are also inclined to concur with Lian and Marcocelles that a thrombosis or a mediastinitis may occasionally be the responsible factor. Auricular fibrillation may be an important additional agent, as when this occurs the auricle remains ballooned out and the production of thrombi is favored. In the differential diagnosis of factors which may produce this laryngeal nerve paralysis, an autopsy is often necessary, as aortic aneurysm, syphilitic mediastinitis, and trachial or bronchial gland enlargement, oesophageal cancer, and infectious or toxic neuritis must be ruled out, the X-ray, however, being a valuable aid in the differential diagnosis.

Garland and White report 9 cases in detail, occurring in the Massachusetts General Hospital, in the past 8 years. In 2 of the cases there was a difference also in the size of the pupils, the right being larger than the left. Four of the cases showed auricular fibrillation. Duration of the hoarseness or aphonia in the cases seen at this hospital varied from 5 days to 10 months. There were occasional remissions. They believe this condition is frequently overlooked clinically and the relationship with mitral stenosis not considered.

F. J. HIRSCHBOECK.

## SURGERY

### SUPERVISORS:

E. MENDELSSOHN JONES

LOWRY BLDG., ST. PAUL

VERNE C. HUNT,

MAYO CLINIC, ROCHESTER.

**DIAPHRAGMATIC HERNIA:** Arthur Dean Bevan (Arch. of Surg., July, 1920.) Roentgen ray examination of the stomach and intestine, after the use of barium solution, has shown that diaphragmatic hernias are much more common than was formerly supposed to be the case.

The author classifies these hernias as: (1) congenital, (2) acquired, and (3) traumatism of the diaphragm from stab wounds, gunshots, and so forth, with resultant traumatic hernia.

Congenital hernia occurs at the weak points in the diaphragm; that is, at the juncture of the ensiform process and costal cartilages, between the psoas muscle and ribs posteriorly, at the esophageal opening, and the opening for the venae azygos and the phrenic nerves.

The author reports in full four recent cases of diaphragmatic hernia of the acquired type. These hernias occur almost always at the esophageal opening. The development of acquired diaphragmatic hernia is considered parallel to the development of inguinal hernia; the peritoneal sac first makes its way through the opening, followed, because of increased intra-abdominal pressure, by some of the abdominal viscera. Diaphragmatic hernia practically never occurs on the right side on account of the position of the liver; the viscera that pass through the esophageal opening are those of the left abdominal cavity in the following order of frequency: stomach, great omentum, transverse colon, and small intestine. The clinical picture of a diaphragmatic hernia involving the stomach may be indefinite; it may simulate ulcer, pyloric obstruction, or disease of the gall-bladder, while hernia of the colon may present symptoms of intestinal obstruction. The definite diagnosis is made by x-ray examination.

In the author's operation for the repair of diaphragmatic hernia, wide exposure is obtained through a large "S" shaped incision on the left as employed for splenectomies. The contents of the hernial sac are pulled down into the abdominal cavity, and the hernial opening is closed by snug approximation of the pillars of the diaphragm and the esophagus, with interrupted sutures of catgut. To add additional security, the stomach may be sewed to the diaphragm or to the parietal peritoneum. Illustrations show the steps in the operation.

The ages of the patients were: fifty-seven, fifty-five, forty-one, and forty-nine, with symptoms of three years', ten weeks', five years', and three years' duration, respectively. In all the cases, symptoms were referable to the stomach. The contents of the hernial

sac in the first case consisted of a large part of the stomach and some omentum, in the second case of about half the stomach, in the third case of the great omentum and transverse colon, and in the fourth of a large part of the stomach and its omentum.

All the patients made a good recovery except one. The necropsy in this case showed a papillary carcinoma of the splenic flexure of the colon, with complete occlusion of the bowel.

V. C. HUNT.

**LUNG ABSCESS FROM A PRACTICAL SURGICAL POINT OF VIEW:** Wyman W. Littermore, (Surg. Gyn. and Ob., Vol. 31, No. 2, pp. 144-147). In the author's experience, the most common cause of lung abscess has been aspiration of blood or infected matter during or following operations on the nose and throat and the extraction of teeth. The next most common cause is bronchopneumonia.

The most common conditions in which a differential diagnosis must be made are lung abscess, bronchiectasis and a small encapsulated or interlobar empyema.

The author emphasizes the importance of the history, sputum examination, x-ray examination, and physical examination. He considers examination of the sputum very important, stating that several examinations are necessary in order to exclude tuberculosis, and also that the finding of large numbers of influenza bacilli makes the diagnosis of bronchiectasis practically certain. The x-ray is important as it is the means of making the diagnosis in many cases, and definitely localizes the process. The physical examination is of the least importance on account of the indefinite findings.

The author states that, as a general rule, all patients with lung abscess should be operated on unless there is some good definite reason for not doing so; however, from 6 to 10 per cent will recover without an operation. The use of the long aspirating needle as a diagnostic means is advised against, since the process may be localized by x-ray and physical signs. If the abscess is not discovered by aspiration, operation should not be abandoned. The dangers of infecting the pleural cavity by the needle in the event of withdrawing pus from the abscess through an area in which the visceral and parietal pleurae are not adherent, and the puncture of a large vein, with resultant hemorrhage, are pointed out.

The two-stage operation is the safest, but the abscess is not always found by this method. A window is opened down to the pleura, and if the lung and costal pleura are not adherent they are made so by suture or gauze left in place two to three days. Making a pneumothorax, however, is one of the dangers of suturing. At the second stage, two or three days later, the abscess is drained through the area prepared at the first operation. The majority of abscesses are nearer the periphery of the lung than the root, and there the lung and pleura will

usually be adherent. In deep seated abscesses, the lung and pleura have not been found adherent. In a one stage operation, the general pleural cavity is walled off with gauze and the abscess opened. The author drains the abscess with a rubber tube and places a cigarette wick down to the pleura. Three of the twenty-one patients with lung abscess recovered, and one died without operation. One of the seventeen operated on died of lobar pneumonia on the opposite side.

V. C. HUNT.

**STUDIES IN BONE TRANSPLANTATIONS. AN EXPERIMENTAL STUDY OF THE COMPARATIVE SUCCESS OF AUTOGENOUS AND HOMOGENOUS TRANSPLANTS OF BONE IN DOGS:** B. Brooks and W. A. Hudson (Arch. Surg., 1920, 1, 284-309). Extensive clinical and experimental study has given a clear understanding of the steps to ultimate success or failure of autogenous bone grafts. Knowledge of the homogenous grafts is limited and, because of the unsuccessful results following homogenous tissue grafts, they have not been considered favorably.

In this study the author has undertaken to determine the proportion of permanently successful transplants of homogenous bone and the influence of the age of the donor and recipient on the successful termination of the operation.

Dogs were used in the experiments described in this article and, when possible, were operated on in pairs, a young and an old one together. A segment of each ulna was removed from each dog and replaced respectively by an autogenous and a homogenous graft. The bone transplant was later studied macroscopically and microscopically. A saturated aqueous solution of sodium alazarin sulphonate was injected in some cases as a vital stain. The animals were classified as young, adult, and old, their age being determined by a study of the lower epiphyseal cartilage of the femur.

**Results of Autogenous and Homogenous Transplants in Dogs**

	Number of Cases	Successes	Failures	Per cent Successes
Autogenous . . . .	33	28	5	84.8
Homogenous . . . .	43	33	10	76.8
Total . . . . .	76	61	15	80.2

There were 31 cases of autogenous and homogenous grafts in the same animal. In one instance both grafts failed; in 4 the autogenous grafts failed; in 5 the homogenous grafts failed. There was no difference in the growth in 10 of the remaining 21 cases; the autogenous graft regenerated more bone in 8; and in 3 the homogenous grew better. It would seem, therefore, that homogenous transplants of bone are less likely to succeed than autogenous transplants, but there was no indication of absorption of the grafts.

According to the age the autogenous graft was

successful in the young, 100 per cent; in the adult, 83 per cent; and in the old, 57 per cent.

The homogenous graft was successful when the donor was young in 73 per cent, when adult in 83 per cent, and when old in 80 per cent. It was successful when the recipient was young in 81 per cent, when adult in 72 per cent, and when old in 80 per cent.

The author concludes that bone defect may be repaired by homogenous grafts in proportion of 76.8 per cent as compared with 84.8 per cent of successful results in autogenous grafts. The age is a factor in determining the success, but is probably of less importance than factors of incompatibility of tissue of different animals.

J. I. MITCHELL.

**END RESULTS OF HALLUX VALGUS OPERATIONS—A REPORT OF NINETY-SIX CASES AT THE ORTHOPEDIC CLINIC OF MASSACHUSETTS GENERAL HOSPITAL SINCE 1905:** H. W. Spiers (Jour. Amer. Med. Assoc., 1920.) Operations for Hallux-Valgus are so often unsatisfactory that the author endeavors to review ninety-six cases to arrive at a satisfactory method of treatment.

The most frequent operation for Hallux-Valgus in his series was resection of the head of the metatarsal bone, and of this series of seventy-eight, 61 per cent were satisfactory.

There were eight operations of removal of exostosis only, with 75 per cent failures.

Kellar method of operation in seven cases, all were satisfactory. He states in his opinion that the cause of failure in complete excision was the loss of the foundation of the weight-bearing pillars of the transverse arch of the foot.

Metatarsalgia and painful plantar callosities were a frequent source of trouble.

Again, partial ankylosis was frequent. Lastly, spur formation was often seen. Relief was short-lived when only the exostosis was removed.

The author strongly recommends the Kellar operation for bunions which consists briefly in an inverted U incision, avoiding the bursa, removing the exostosis and a good portion of the dorsal surface of the head of the first metatarsal, subperiosteally and an excision of the proximal end of the proximal phalanx for sufficient distance of the correct alignment easily.

This method preserves the cartilages of the joint in the weight-bearing surface and gives correction to the deformity, by shortening the toe, removing the exostosis and interfering but little with the muscular attachments.

The cosmetic and functional results in all cases have been good when this operation was used.

CHATTERTON.



## GYNECOLOGY AND OBSTETRICS

### SUPERVISORS:

ARCHIBALD L. McDONALD,  
FIDELITY BLDG., DULUTH.

ALBERT G. SCHULZE,  
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**THE SIGNIFICANCE OF SYPHILIS IN PRENATAL CARE AND IN THE CAUSATION OF FETAL DEATH:** J. Whitridge Williams (Bul. Johns Hopkins Hosp., Vol. 31, No. 351.) The early aims of prenatal care were: 1. Recognition and treatment of toxemia to prevent eclampsia, 2. Supervision of the mother to avoid premature labor or other accidents, 3. Encourage maternal nursing. In 1915 the author reviewed 700 fetal deaths including all which occurred during the last 12 weeks of pregnancy and 2 week postpartum) in the last 10,000 delivered at the Johns Hopkins Hospital. Twenty-six per cent were due to syphilis, or more than to any other single cause. Since that time routine Wassermann tests were done on all expectant mothers and treatment instituted wherever possible.

The present report covers 302 fetal deaths in 4,000 confinements, of which 1,839 were white and 2,161 were colored. Positive Wassermans were found in 2½ per cent of the whites or one in 40, and in 16.29 per cent of the colored or 1 in 6. Of the 302 fetal deaths there were 99 white and 203 colored.

Syphilis caused 34 per cent of the deaths, systocia 15.20 per cent, toxemia 11.55 per cent, prematurity 10.59 per cent, unknown, 8.61 per cent, placenta previa 5.28 per cent, deformity 3.64 per cent, miscellaneous 10.69 per cent. The loss from syphilis did not include some cases which were doubtful but could not be proven at autopsy but this factor caused nearly as many (24 per cent) deaths as dystocia, toxemia, and prematurity (37 per cent). The incidence of syphilis was much higher in the colored than in the white babies; i. e. .45 per cent and 12 per cent respectively. In the whites however it caused more deaths than any single cause except accidents at labor.

The results show conclusively the benefits derived from treatment of the mother. There are three groups of cases: 1. No treatment, 107 cases with 52 per cent stillborn or syphilitic babies, 2. Insufficient treatment, 2 doses salvarsan, 103 cases, with 37 per cent stillborn or syphilitic babies, and 3. Satisfactory treatment salvarsan and mercury, 163 cases with 7.4 per cent stillborn or syphilitic babies.

ARCHIBALD L. McDONALD.

**PUERPERAL SEPSIS AND ITS TREATMENT:** R. S. Titus (Boston Med. and Surg. Jour., Vol. 183, No. 13, p. 371.) This is an excellent presentation of the modern conception of this subject. The author

explains the so-called "Autogenous infections," i. e. those which occur in women delivered spontaneously with no known source of extraneous contamination, as due to two causes. 1. Abnormal character of the vaginal bacterial flora at the time of delivery. 2. A focus of infection outside of the pelvis. He considers puerperal sepsis a wound infection and makes interesting comparisons on that basis. He recognizes three types. 1. Hemolytic streptococci with little or no local reaction and hence there is no indication for intrauterine treatment. Therapy is limited to constitutional measures. 2. The pyogenic organisms with more local reaction and later general septicemia. He describes pathology in the uterus and objects to any active treatment except to secure drainage of a definitely localized process. The clinical course of various forms of infection with possible types of extension are well described. 3. Putrefactive saprophytes which are constant inhabitants of the vagina, and are active in dead matter, retained secundines or bloodclots. This is not a serious form of infection and the author sees no indication for active local treatment except in case of hemorrhage.

In general he marshals the evidence against intrauterine therapy in all forms of puerperal sepsis and pleads for more active constitutional supportive therapy.

ARCHIBALD L. McDONALD.

## PEDIATRICS

### SUPERVISORS:

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MANKATO CLINIC, MANKATO.

**PNEUMOCOCCUS PERITONITIS IN INFANCY OR EARLY CHILDHOOD:** Paul W. Beaven (Amer. Jour. Dis. of Child., Oct., 1920.) Pneumococcus peritonitis is a rather rare disease among infants and young children. The great majority of the patients are under two years of age. The pathology of the peritoneal cavity. Very early in the disease it forms many adhesions which sometimes wall off, making localized abscesses. The source of infection is undoubtedly through the blood stream. From the study of our cases it appears that among the young children the source is mostly from the lungs. It is possible that pneumococci enter through the respiratory tract and that they may enter the blood stream without localizing in the lungs.

There are two types of cases. The first are those which are clearly secondary to pneumonia or an empyema and the second are those that are apparently primary. The onset of the first may be unattended by any definite symptoms and nothing be apparent until the abscess is localized in the abdomen. The

onset of the second is characterized by symptoms so acute as to immediately overwhelm the patient.

From the first group the usual course was as follows:

The onset was not marked by any definite symptoms. Previous to the time when extension was first noticed there was no tenderness, rigidity, pain or vomiting. At the time of localization there is modified fever, some enlargement of the abdomen and there may be attacks of vomiting. The rather rapid process of the disease differentiates it from tuberculosis peritonitis.

In the second type it is rare for the patients to recover. The abrupt and stormy onset differs from the very similar condition caused by the streptococcus. In acute appendicitis the symptoms are not as marked and there is more localized tenderness. The treatment is a debated point. Most surgeons believe that the abdomen should be opened. In the cases here reported nothing was gained by opening the abdomen. The pathology suggests the form of treatment, that is, as soon as a localized abscess is formed it should be opened.

R. N. ANDREWS.

#### THE CALCIUM METABOLISM OF PREMATURE

**INFANTS:** Bengt Hamilton (Amer. Jour. Dis. of Child., Oct., 1920.) The calcium metabolism of premature infants has hitherto not been studied systematically. Such a study is, however, well justified by the fact that these infants are more liable to acquire rachitis than full-term babies. About 85 per cent of the body's calcium at birth is stored during the last two or three months of fetal life. A premature birth means that the body is exposed to postnatal life containing a proportionately very small amount of calcium. It has been surmised that this fact may be at least partially responsible for the prevalence of rachitis among the prematures. According to our present state of knowledge, however, rachitis and calcium starvation are not identical conditions. It might be possible that the assumed calcium starvation of the prematures would in some way make them more susceptible to rachitis. But there is also another possibility, namely, that some of the so-called rachitic symptoms of the prematures have nothing to do with rachitis, but are symptoms of simple osteoporosis.

One peculiarity of rachitis in prematures is the very early appearance of craniotabes. This develops to a much greater extent in prematures than in infants born at full-term. It is noteworthy that this excessive softening of the flat bones of the skull is often found in breastfed prematures in the best hygienic conditions, who are healthy and gaining rapidly in weight. The predisposition of prematures to acquire rachitis, however, can hardly be denied altogether.

In some experiments it was demonstrated that in

those periods where the intakes of calcium exceed 200mg., the retentions are sufficient, that is, as large as in normal infants, while in the periods where the intakes are lower than this amount, there was sufficient retention only in one case. It is tempting to draw the conclusion that the intake must exceed a minimum of 200mg., if sufficient retentions are to be attained. The calcium is excreted mainly in the stools.

Lindberg's experiment where an infant was alternately fed with ordinary breast milk and breast milk enriched with fat, demonstrates that a high fat intake may in the breast fed infant lead to temporary losses of calcium. Holt and his co-workers in their work on calcium and fat metabolism in bottle fed infants found no constant relation between calcium and fat excretion. The work of Lindberg on the other hand demonstrates that in a breast fed infant with abnormally high fat intake such a relation may exist. This may be explained in this way, that in breast fed infants the same relation is found when the fat absorption is low.

In this discussion an attempt has been made to find a plausible nonrachitic cause for the low calcium retention in prematures. At present, however, the available facts are neither numerous nor complete enough to justify the drawing of definite conclusions.

R. N. ANDREWS.

#### RECENT PROGRESS IN PEDIATRIC SURGERY:

C. G. Buford (Surg., Gyn. & Ob., July, 1918). A very high fatality which prevails following surgical operations on infants and young children is the strongest evidence that one has something more to think of than to anaesthetize a baby and skillfully perform an operation. The author states that it is not well to deplete these patients with cathartics or to leave a baby too long without food either before or after operation. One must never hurry into operations of convenience without being sure that the child's digestion and present state of nourishment is as good as it can be made. The period of anaesthesia and the amount of anaesthetic should be reduced to a minimum. Because of blood changes ether is much better than chloroform.

The matter of allowing the oozing of blood to continue during operations on babies is a serious thing. Every drop of blood lost counts far more against an infant's prospects for recovery than it does in later life. About eight per cent of the adult body weight is blood, while in the newborn it is about five per cent. In adults, when five of this eight per cent is lost, the patient is pretty certain to die. Should a baby lose the same percentage it is totally exsanguinated. The amount of blood of babies lost at operation is usually underestimated. Children should be carefully watched and when necessity presents itself direct or indirect transfusion must be used. Hypodermoclysis and transfusion with normal salt are not satisfactory in young children.

Helmholz has shown the ease with which indirect transfusions of citrated blood may be made through the longitudinal sinus when the anterior fontanelle is open.

Intracranial hemorrhage of the new born is being diagnosed with increased frequency. It is becoming distinctly a greater surgical affection.

In view of the increase in popular recognition of different types of acute bone lesions, there is evidently more need than ever of making roentgen plates of bones in children. Scurvy and bone syphilis are bone lesions which are often revealed where they were not suspected. Osteomyelitis in children is usually demonstrable by x-ray plates.

Among the abdominal surgical affections of infancy, that of congenital pyloric stenosis for the present exceeds all others in surgical interest. The Rammstedt is very popular and in performing the same the greatest care must be taken not to puncture the mucosa; an accident which has occurred repeatedly in the hands of some of the best workers. The afterfeeding is important and should be directed by a pediatrician.

ROY N. ANDREWS.

## ROENTGENOLOGY

### SUPERVISORS:

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**THE TREATMENT OF ANGIOMATA WITH RADIUM:** William S. Newcomet (*Amer. Jour. Roent.*, July, 1920). The use of radium should be the ideal method for the destruction of all nevi. The high radiation penetrates the tissues causes an inflammatory reaction, and a certain number of cells scattered throughout the tissues are destroyed. The author does not advise the use of radium in the destruction of small nevi or superficial hemangiomas and the thin pigmented mole. Radium performs its greatest mission in hemangiomas with large vessels which extend deeply into the tissues in the neighborhood of large nerves and important structures that cannot be destroyed. The earlier the angiomas are treated the better will be the result.

He insists that a standard technique is absolutely essential. The amount given is about an erythema dose. It is better to under estimate it rather than to produce reaction that results in ulceration. If the nevi are deep, the applicator is placed from 3-6 cm. away and moved frequently to produce "cross-fire" effect. But in the more superficial types the applicator is placed 1-3 cm. skin-distance. Remembering the rules of radiation the applicator should be elevated from the skin to such a distance that by the number of movements the deep part of the nevus will

receive about the same amount of radiation as the more superficial structures. Greatest care should be taken with the skin that adjoins the nevus, particularly if it ends abruptly. It will be found many times more sensitive and will break down while the vascular tissues appear to be unharmed.

In a list of about 200 cases of angiomas of all forms, 5 died, 2 were infants with two large hemangiomas, 2 women and 1 man proved to be types of sarcoma, 86 were selected for treatment with radium, and of these 7 were failures and 17 disappeared from observation. The result in 62 cases was all that could be desired with very little scarring and after effects.

R. G. ALLISON.

**DUODENAL DIVERTICULA:** Edmund J. Spriggs (*Brit. Jour. of Surg.*, July, 1920). In the last thousand consecutive x-ray examinations of the alimentary tract made at Duff House with an opaque meal, diverticula of the duodenum have been noted ten times. Although such diverticula are uncommon, the shadows they cast on the screen or plate may cause confusion unless their nature be recognized, and they may in rare instances give rise to symptoms. The literature shows the commonest situation is the second part of the duodenum. More than one diverticulum may be present, but they are most frequently single, and to find more than two is rare. The site of 57 cases reported in the literature were, 11 in the first part, 2 in both first and second parts, 41 in the second part, and 3 only in the third.

The size varies from a linseed to a hen's egg. The mouth of the diverticulum is frequently wide. The structure is that of the duodenal mucous membrane, with the muscularis mucosal, and frequently some fibres, often atrophic, from the outer muscular layers.

As a rule duodenal diverticula are harmless, no doubt because they drain easily from the wide openings. All the ten cases reported by Spriggs were single diverticula. Five were in the second, and five in the third part of the duodenum. One case was observed at operation. In two of the other cases the duodenum had been examined by a surgeon, but the diverticulum had not been detected. In nine of the cases the symptoms were not connected with the diverticula. In one case, still under observation, this point is doubtful.

R. G. ALLISON.

**A METHOD OF APPLYING RADIUM IN CASES OF OESOPHAGEAL CANCER:** P. P. Vinson (*Surg. Gyn. and Obst.*, Sept., 1920). The majority of patients who come under observation have had such restricted diet that they are very weak, and it is advisable to dilate the stricture forcibly so that food may be taken before treatment is begun. Treatment is not attempted on any patient who has complete oesophageal closure, and who is unable to swallow

the silk thread which is so necessary as a guide in oesophageal instrumentation.

The patient first swallows 4 or 5 yards of silk thread, button hole twist. With this as a guide a plain olive on a whalebone staff is passed down to the stricture, and the distance of the obstruction from the incisors is carefully noted. The dilating olives are then used, being guided on the thread by a flexible wire spiral. After the dilation has been carried to 40 or 50% the patient is urged to take fluids and semi-fluid foods for several days before treatment is begun. Following this, the radium exposures are begun by the aid of the apparatus devised by Plummer.

The main portion of the apparatus is made of brass. It consists of a narrow chamber and walls 1 M. M. thick. This chamber is 7 M. M. wide and 4 C. M. long, and in its cavity is placed the radium. The lower end of the chamber screws into a dilating olive which will pass the stricture. The upper end of the chamber is continuous and a brass knob about 55 F. in size. The upper end of the knob has an opening which a whalebone staff fits, rather snugly, but not too tightly. At its margin are two small perforations, through which is passed a double heavy fish line.

The apparatus is passed down the oesophagus, guided by the swallowed thread until the dilating olive passes the stricture, and the brass knob lies above the stricture. Thus the chamber holding the radium remains in position at the site of the stricture for as long as is desired. The staff pulls out and the long fish line is left hanging outside the mouth. When it is desired to discontinue the exposure, the instrument may be displaced upward by firm, slow pulling of the heavy thread. The first exposure is usually of 3 to 4 hours, and later exposures are from 14 to 16 hours, using 50 G. M. radium salt, or its equivalent in emanations. About three exposures are used at the present time, in addition to the Coolidge tube treatment.

R. G. ALLISON.

**X-RAY STUDIES IN GOUT:** E. D. McCarty (Amer. Jour. of Roent., Sept., 1920). Radiographic studies of the hands and feet of gouty subjects have been made by Huber, Drinberg, Strangeway, Jacobsohn and others. With the exception of Huber and Strangeways all authors have considered certain radiographic findings to be pathognomonic evidence of gout. The present study was made for the purpose of attempting to determine whether the diagnosis of gout was justifiable upon the basis of the findings of these investigators. For this purpose the plates of the hands and feet of nine cases of tophaceous gout have been studied.

The author gives in detail the protocols in these nine cases and draws the following conclusions:

The soft tissues may or may not show nodular

thickening (tophi). These may be small or very large. The bones may show general atrophy, which process may be evenly distributed, or it may be irregular in its distribution. There is a marked tendency for the process to be symmetrical. In the arthritic variety the changes are both proliferative and destructive. The proliferative changes occur about the joints and along the shafts of the bones near the ends. They often appear as small knobs—exostoses (Bruce's nodes). Spur formation also occurs at the attachments of the tendons and ligaments. Destructive changes occur in the joints and are shown by narrowing and obliterating of the joint spaces and irregularity of the articulating surfaces. These joints resemble those seen in chronic infectious arthritis.

Another destructive process is the punched-out areas of decreased density. These are found in the heads of the first metatarsal bones, the bones of the wrist, the head of the ulna and radius, and in the bones of the phalanges. In the region of tophi the bones show proliferative changes and the punched-out areas of increased density, or there may be no visible changes.

For purpose of comparison radiograms of the hands and feet of 100 consecutive cases of non-gouty arthritis were studied. Among these 100 cases there occurred all the types of arthritis and also the punched-out areas of decreased density, similar to those which had been found in gout. The punched-out areas of decreased density were found in 13 of the non-gouty cases. From these findings it is evident that there are no radiographic findings in the hands and feet which are diagnostic of gout. But the types of arthritis described as occurring in gout and the punched-out areas of decreased density are changes very suggestive of gout.

The similarity between the bony changes found in the radiograms in gout and in the chronic non-gouty arthritides indicate the possibility of a relationship in the etiology of the two conditions. In this connection it is interesting to note that Magnus-Levy states that a certain number of cases diagnosed as non-gouty arthritis are very probably actual gout. This conclusion was based on metabolic studies. Furthermore, Nichols and Richardson found sodium urate deposits on the articular surfaces of the bones of the knee joint in certain cases which were clinically arthritis deformans.

R. G. ALLISON.

**COMPRESSION FRACTURES OF THE VERTEBRAL BODIES WITH DELAYED SYMPTOMS—(KUEMMEL'S DISEASE):** Robert H. Baker (Surg. Gyn. and Obst., Oct., 1920.) Kuemmel in 1895 presented 5 cases of this type of spinal lesion. He stated that the disease is characterized by the following features: spinal injury, with temporary symptoms of short duration and no local evidence of diagnostic importance, and subsequent delayed symptoms of

pain, disability, and local signs of bone injury, especially kyphos.

The author reports 7 cases in the hopes that some discussion may arise which will settle this problem of spinal fracture with delayed symptoms and signs. In 5 of the 7 cases x-ray examination at time of injury was negative. In the other 2 cases there was no x-ray examination at the time of injury.

The author presents the theory that there is a type of compression fracture of the spinal bodies which is apparently benign at first and gives no x-ray evidence of a bony lesion, but in which, at some later period, definite bony changes develop, and the diagnosis can be easily made by certain destructive signs including the typical x-ray picture.

He believes there remains two facts to face: either we still lack finesse in x-ray technique or fail to use it in our diagnosis; or there remains a type of spinal lesion of the nature described. He urges earliest possible diagnosis; frequent examinations, physical and x-ray, for the weeks or months following the injury. Such procedure might give us the first evidence of the coming destruction and afford us, by proper treatment, a chance to ward off actual collapse of the fractured centrum.

Note: It is the opinion of the abstracter that adequate x-ray plates of the spine made in both the antero-posterior and lateral direction, of which the lateral is the more important, and interpreted by a competent roentgenologist would disclose evidence of this type of fracture at the time of injury.

P. G. ALLISON.



## BOOK REVIEWS

**DIAGNOSTIC METHODS.** By Ralph W. Webster, M. D. Ph. D. P. Blakiston's Son & Co., Philadelphia.

This volume, a sixth edition, is most comprehensive and is amply illustrated. Since its last publication sufficient new material has been added to justify a revision of the old text. The new material consists of a discussion of the endameba gingivalls, description and methods of study of the bacillus rhinitis, Wolff-Junghan's test for gastric carcinoma, Wagner's "dry" test for occult blood, phenoltetrochlorphthalen test for hepatic activity, urease method for urea, Folin's new method for creatinin in the urine, Folin and Denis' microchemical methods for non-protein nitrogen, Benedict and Murlin's method for amino-acids in the urine, Schick diphtheria toxin reaction, Bronfenbrenner's modification of the Abderholden's test and tests of blood before transfusion.

**PATHOGENIC MICROORGANISMS.** By William Hallock Parker M. D. and Anna Wellels Williams M. D. Lea and Febiger. Philadelphia and New York. \$6.00.

The seventh addition of this work differs from the sixth in the adding of new material and the rewriting of the old. The chapter on Media has been rewritten by Dr. B. V. H. Anthony utilizing the recent work on hydrogen-ion concentrations; the sections on streptococci, on yeasts and on influenza bacilli have been extensively revised; the chapter on complement fixation has also been revised. Recent information on pathogenic bacteria affecting the respiratory system gained through the influenza epidemic and the last part of the war, with preventive measures against typhoid and paratyphoid fevers and wound infections due to anerobic bacteria have also been added. This work warrants perusal.

**TEXT BOOK OF PATHOGENIC BACTERIA AND PROTOZOA.** By Joseph McFarland, M. D. W. B. Saunders Co. \$4.75.

Professor Joseph McFarland's "Text Book of Pathogenic Bacteria and Protozoa" has now reached its 8th edition, an ample evidence of the excellency of the work. It is well written and complete in every sense. It differs from the seventh edition in that numerous alterations, subtractions and additions have been made and these to a good purpose.

**SYMPTOMS IN DIAGNOSIS OF DISEASE.** By Hobart Armory Hare, M. D., B. Sc. Eighth Edition. Lea & Febiger, Philadelphia and New York. 1920.

The appearance of the eighth edition in a relatively short time speaks quite forcibly in commending the usefulness and practicableness of such a text on physical diagnosis.

Since the laboratory procedures have enormously increased in the last few years, the author has omitted them from the work wisely stating that they

require special books. At this time when many a physician is pigeon-holing the various diagnoses by means of a laboratory, the simple practical method of carefully obtaining the subjective symptoms, of scrupulously searching for the objective findings and logically grouping these in a manner that will account satisfactorily in explaining each one in the provisional diagnosis, cannot be too highly emphasized. It is needless to say that the arrangement of the material makes this book very valuable in differential diagnosis.

This second edition (thoroughly revised) contains numerous plates and engravings by the aid of which illustrations the content of the book is frequently clarified and occasionally more readily comprehended.

There is no doubt that the eighth edition will receive a hearty welcome from all interested in symptomatology of diseases.

LEPAK.

**EPIDEMIC ENCEPHALITIS.** By Frederick Tilney, M. D., Ph. D., and Hubert S. Howe, A. M., M. D.

"The volume is primarily a collection of case reports, thirty-one in all, chosen to illustrate most strikingly both the typical and the atypical feature of epidemic encephalitis. The authors are peculiarly well qualified to speak with authority. In assembling

their material they have given in each instance a full and careful analysis of the onset, symptoms and history. This is followed by clinical, neurologic and laboratory findings, illustrated by photographs, charts and photomicrographs showing lesions in different portions of the nervous system.

"The etiological factors, course, duration, prognosis and treatment, and the typical pathological changes are described in detail.

"The symptoms and histories presented differ widely and are, in fact, often contradictory. This diversity is typical of epidemic encephalitis, and adds much to the difficulty of diagnosis. It has been the aim in this monograph to cover as far as possible the various forms in which the disease manifests itself in the hope of facilitating its early recognition.

**Differential Diagnosis is the Keynote of This Monograph**

"The literature has been painstakingly collated, and what is deemed a complete bibliography is appended."

The above review is taken from the Publisher's Note. It is a statement of facts and I take pleasure in quoting it. The book draws very faithfully that picture of extraordinary number and distribution of symptoms which all of us have seen, or heard others discuss, in studying cases of epidemic encephalitis.

LEPAK.



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